Total vegetation cover soil protection Region:NRM Hunter NSW

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

Date: August 2020

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
 - 51-70% Moderate cover protected from wind erosion
 - 31-50% Low cover not protected
 - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data. Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

Acknowledgment of data:

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3



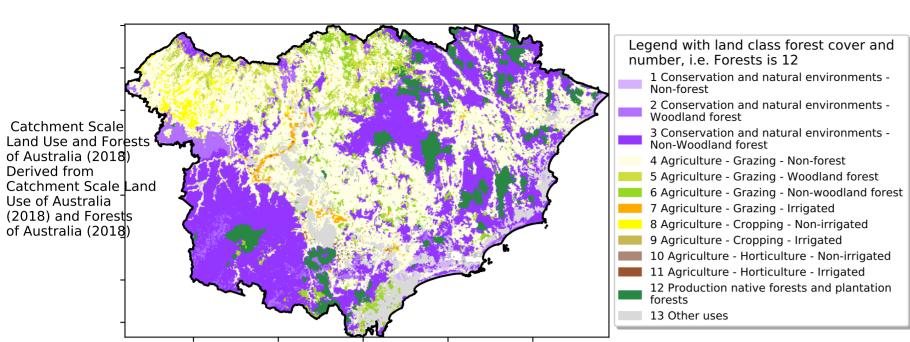




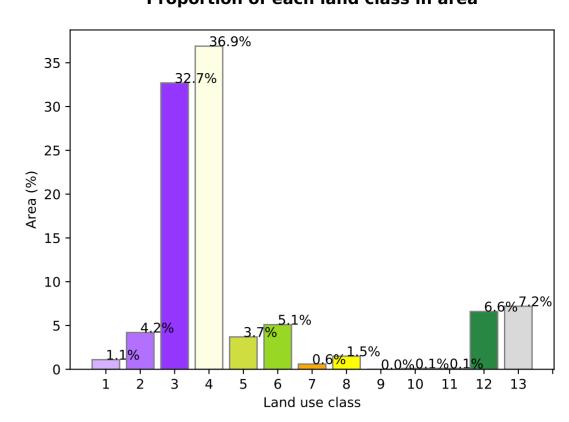


Vegetation Cover Aug 2020

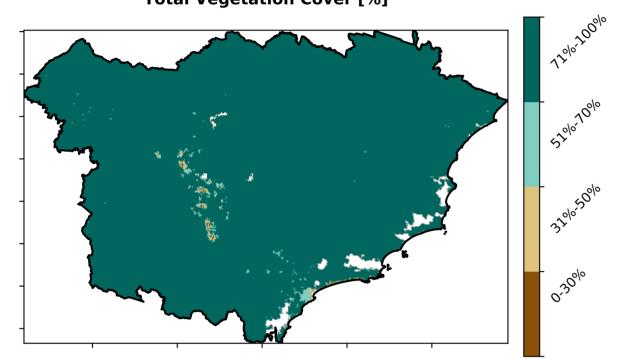
Land use and forest cover



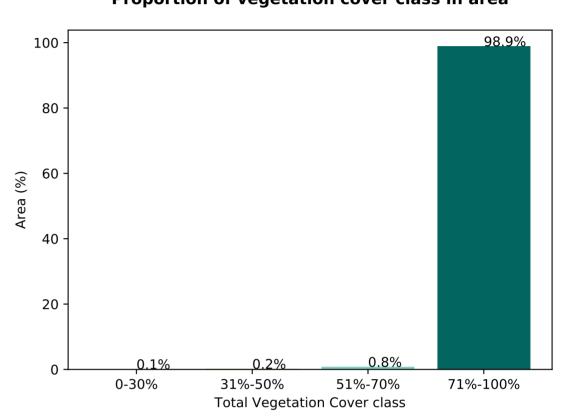
Proportion of each land class in area



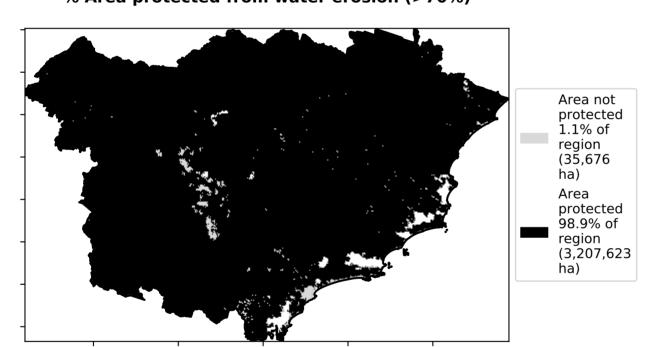
Total Vegetation Cover [%]



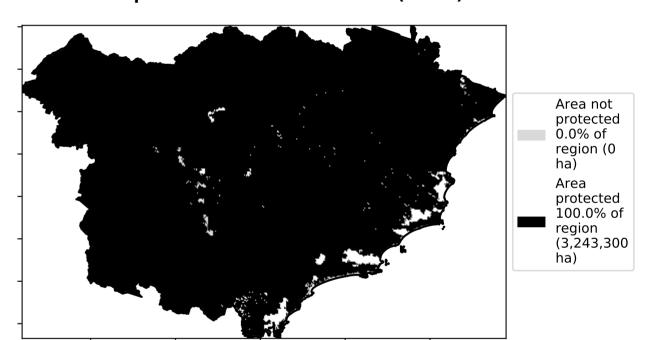
Proportion of vegetation cover class in area



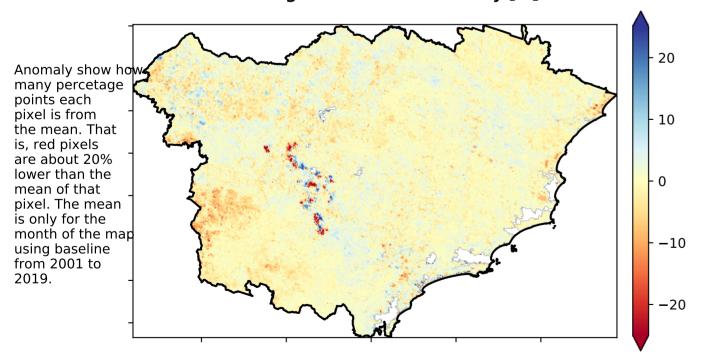
% Area protected from water erosion (>70%)

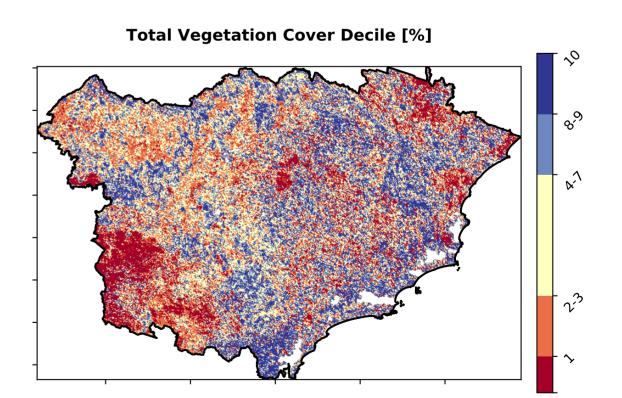


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



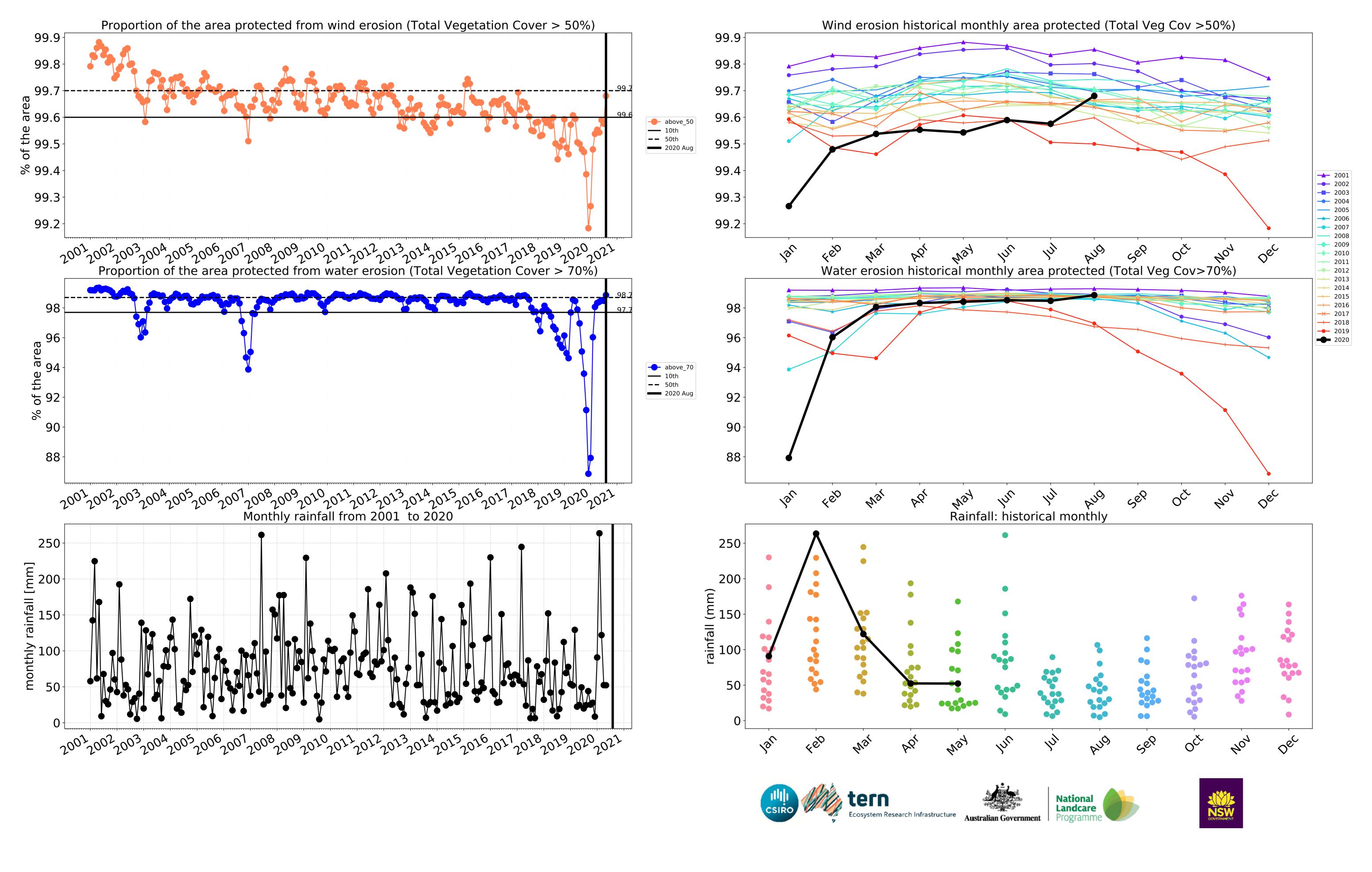




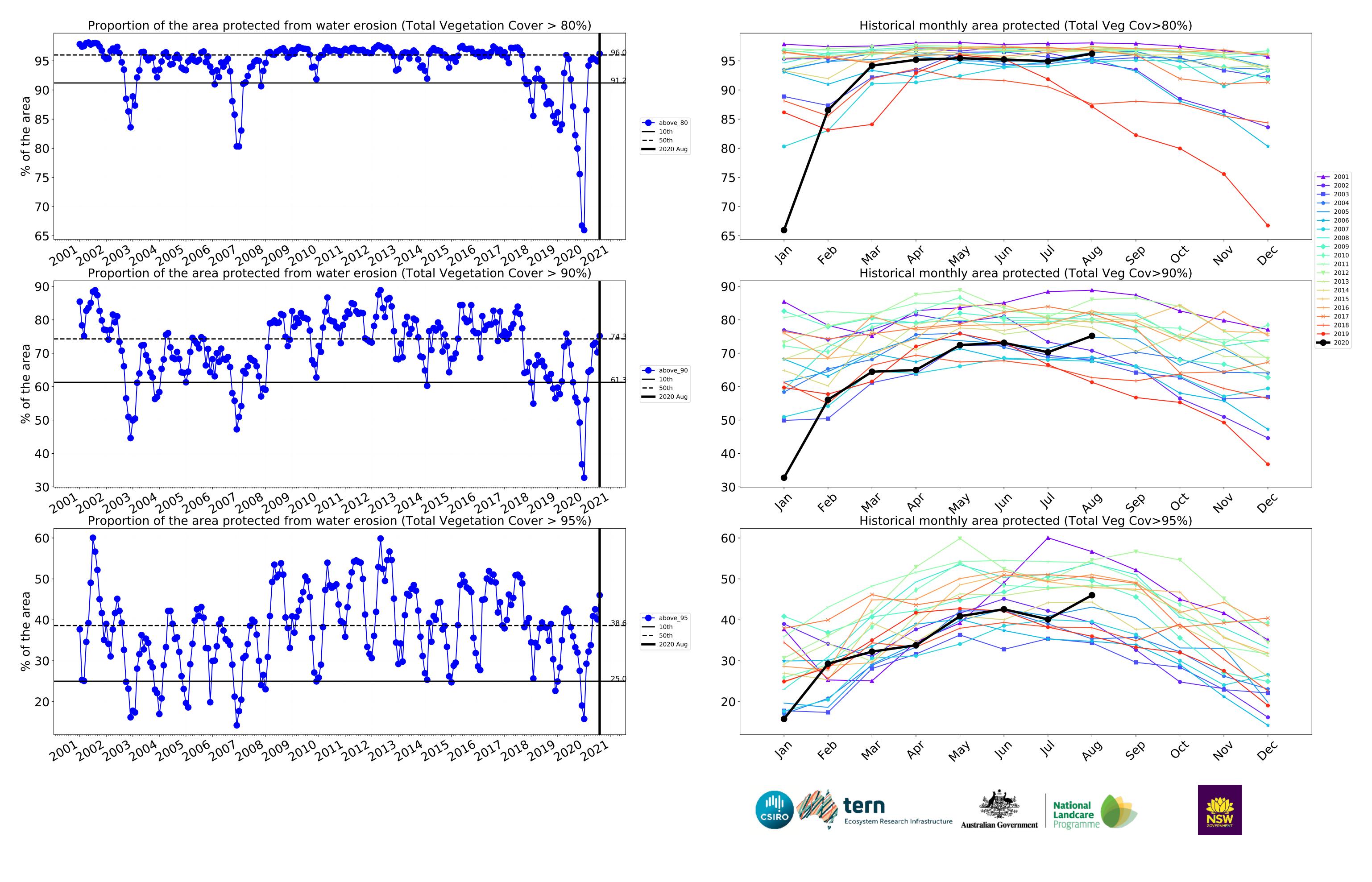




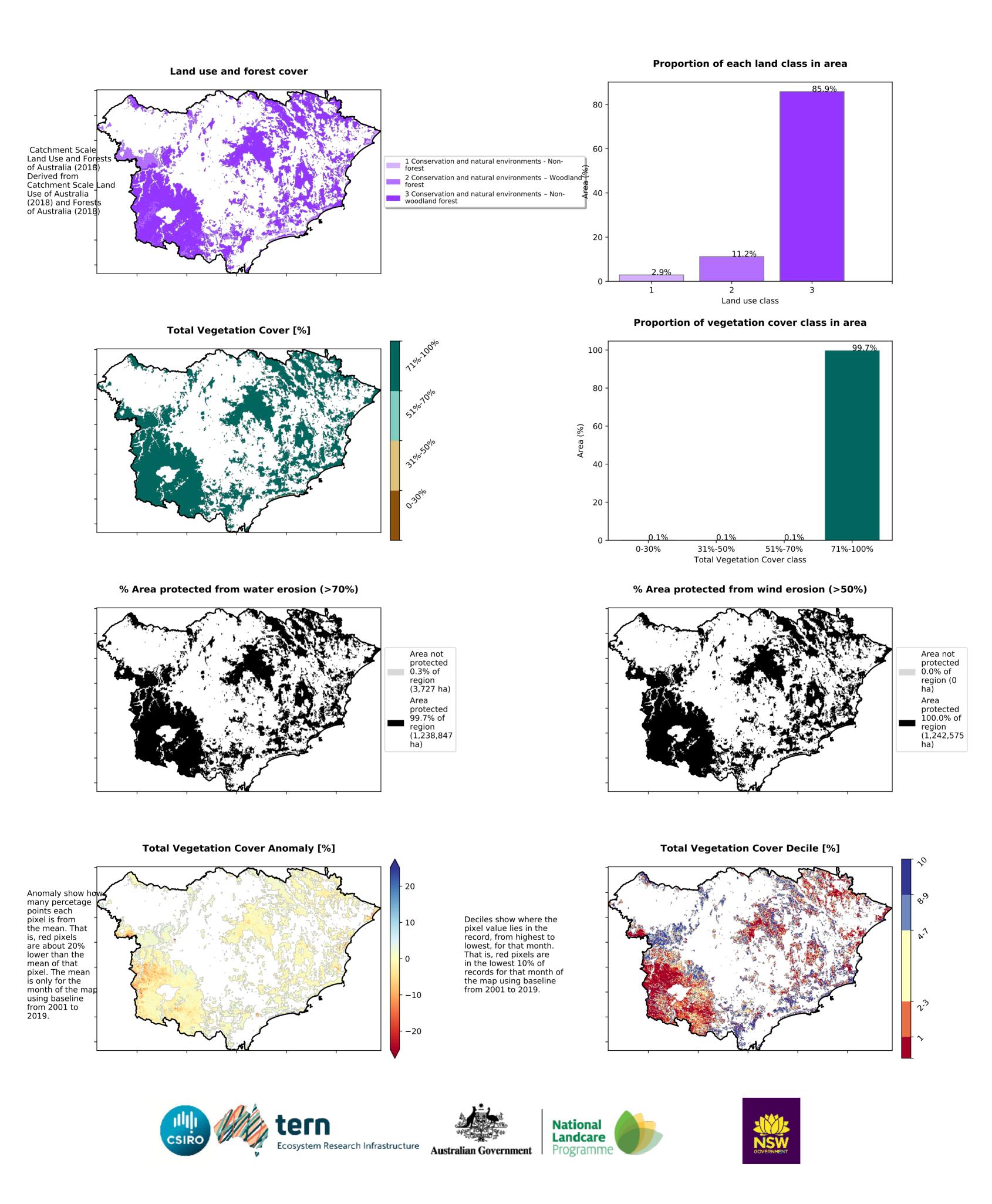




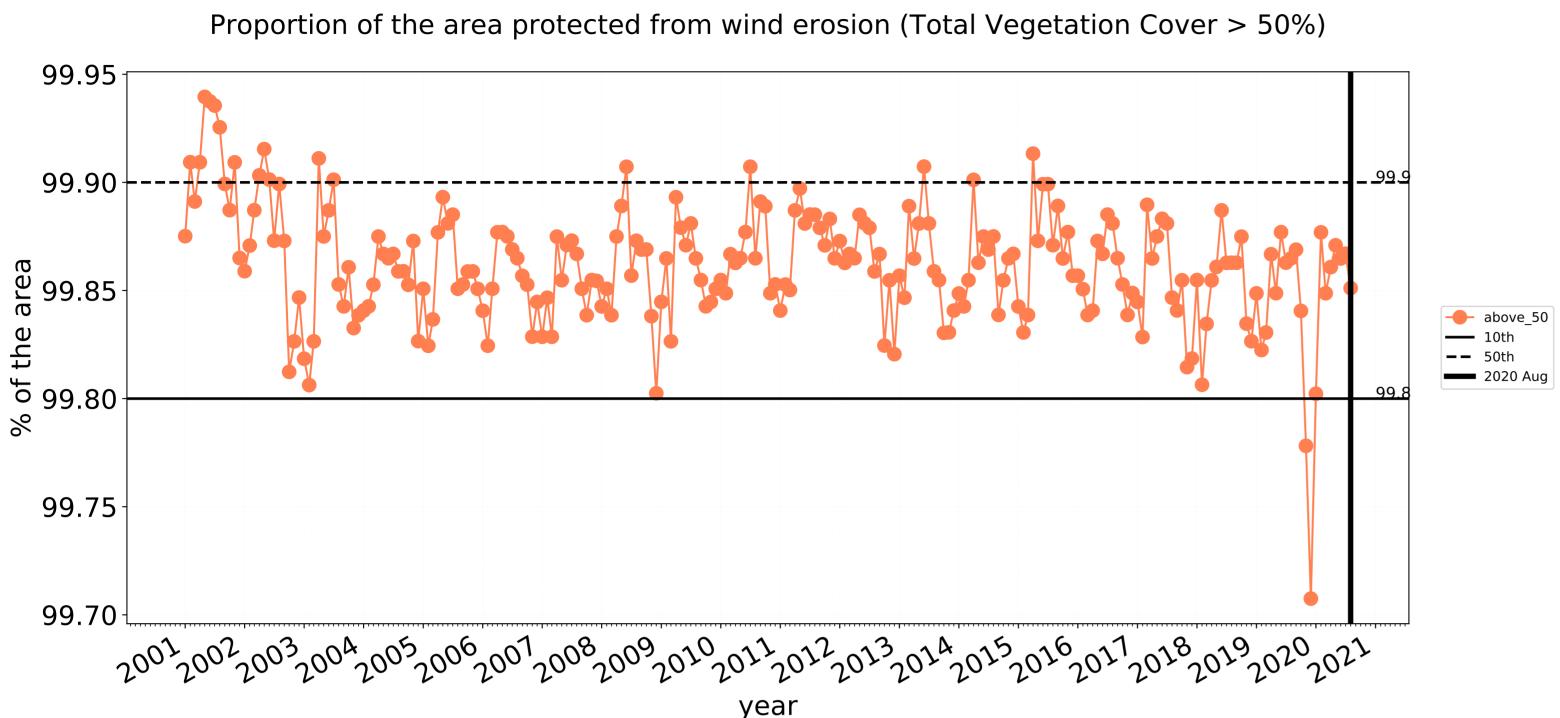
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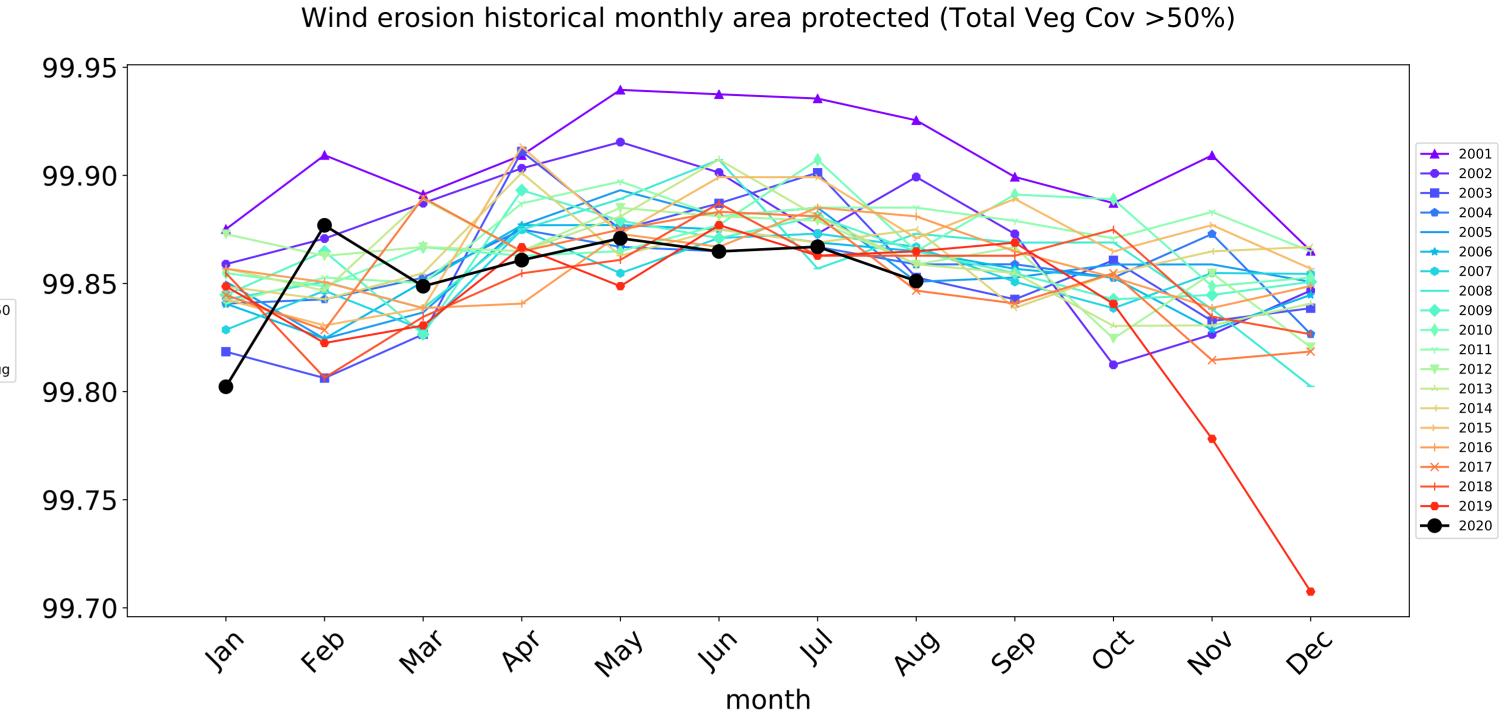


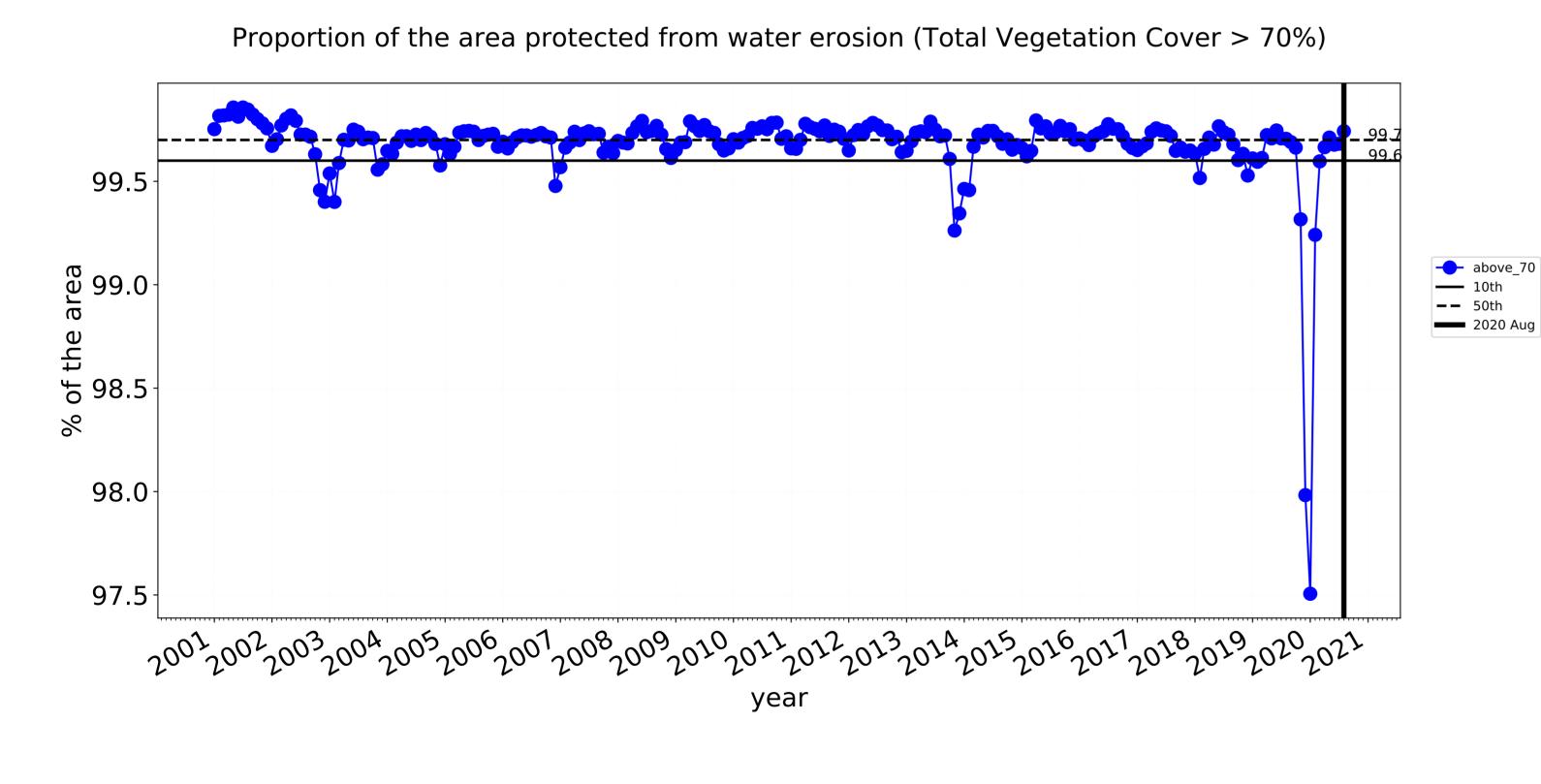
Conservation and natural environments

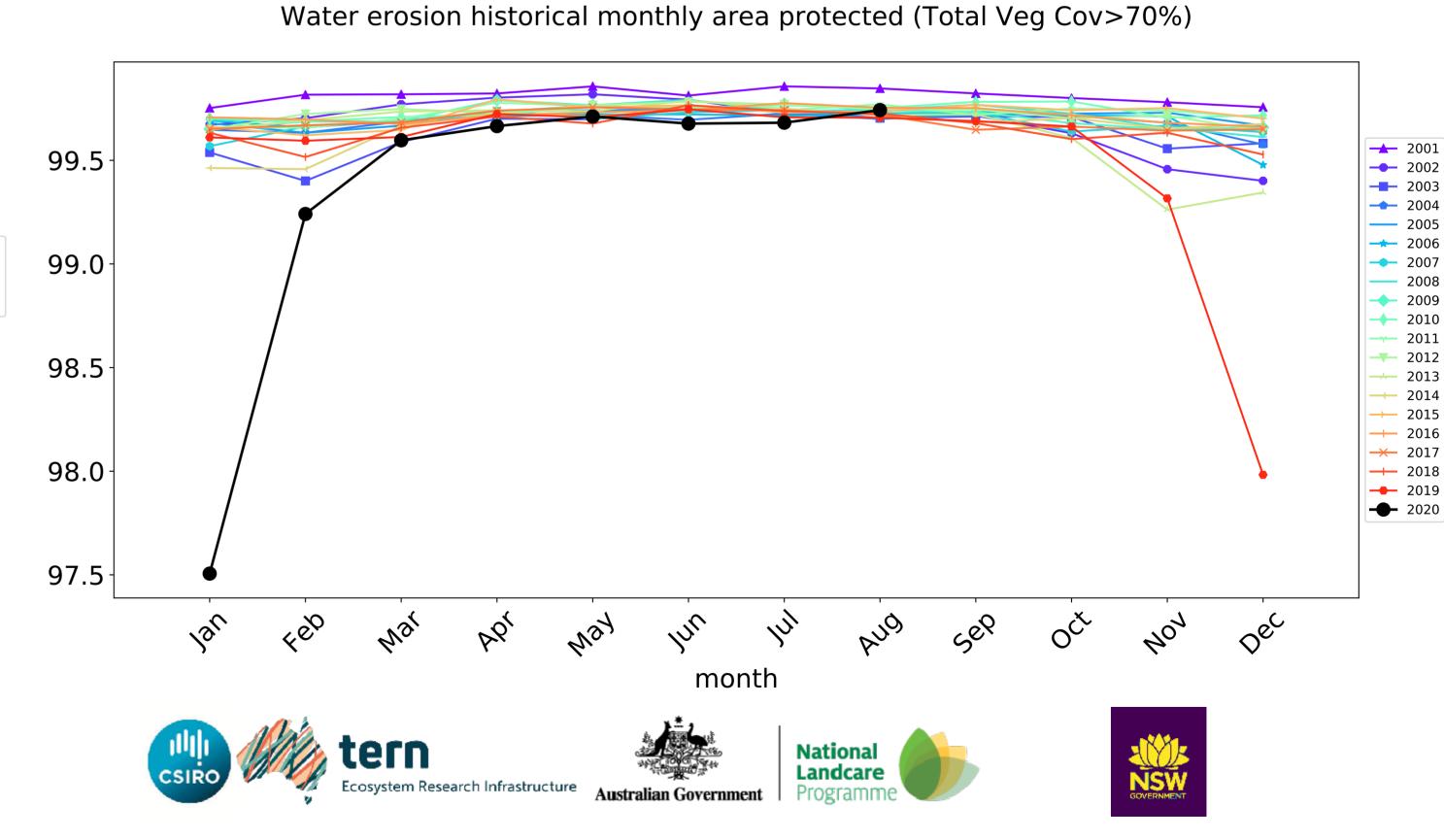


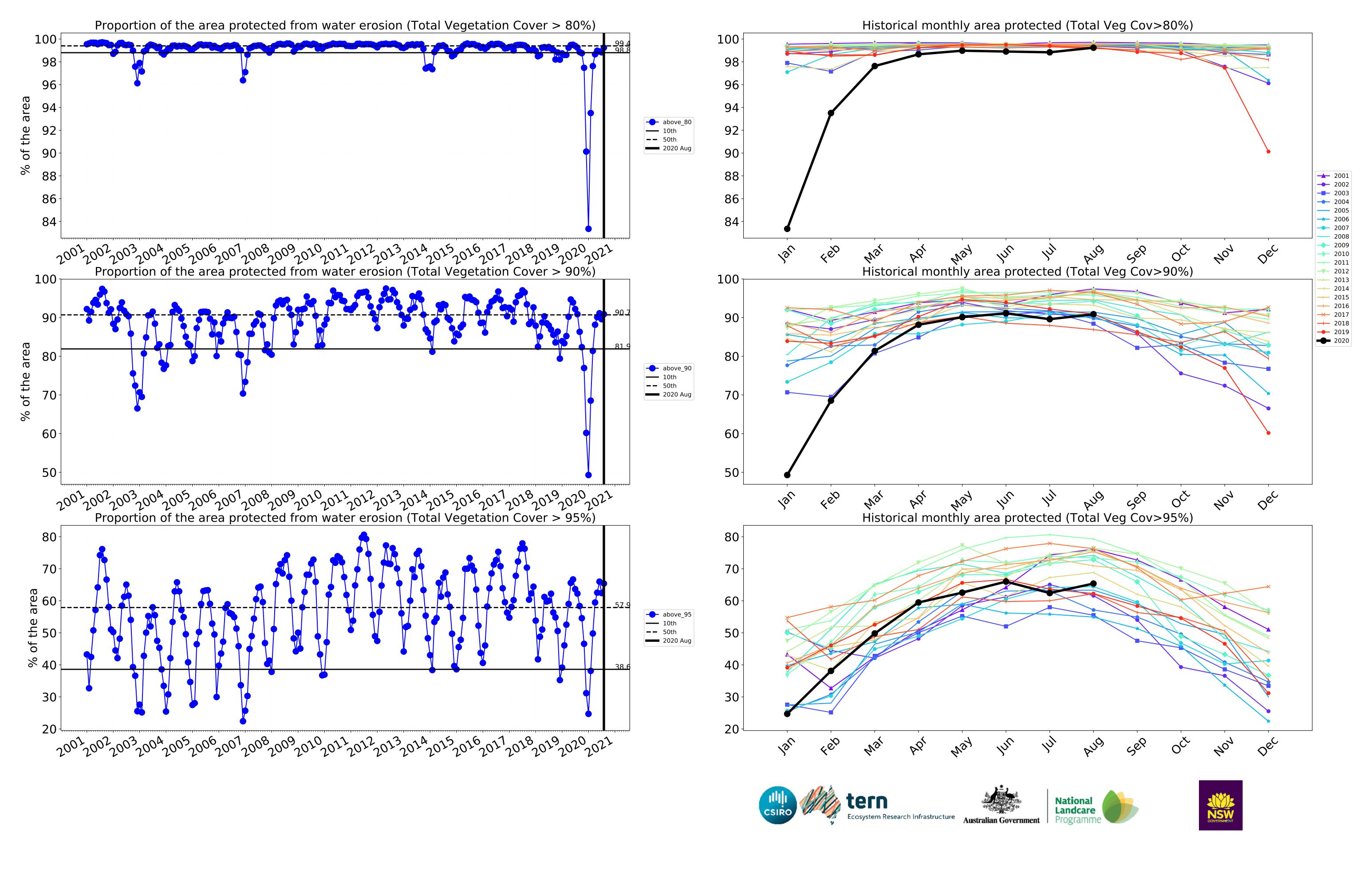
Conservation and natural environments timeseries



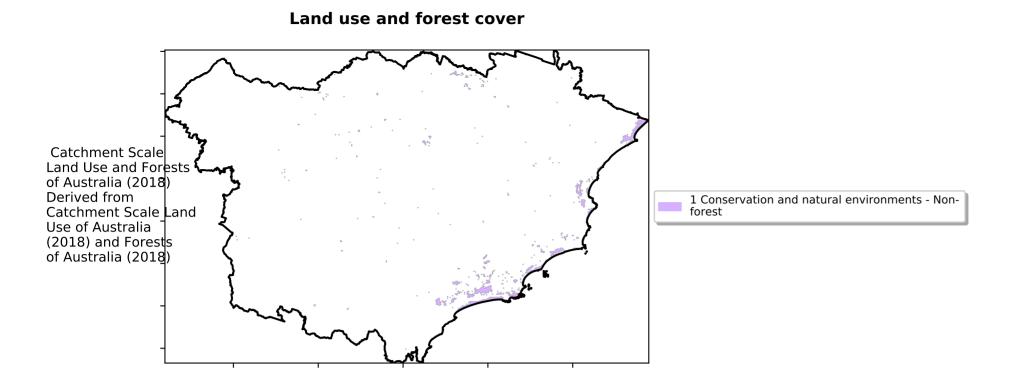




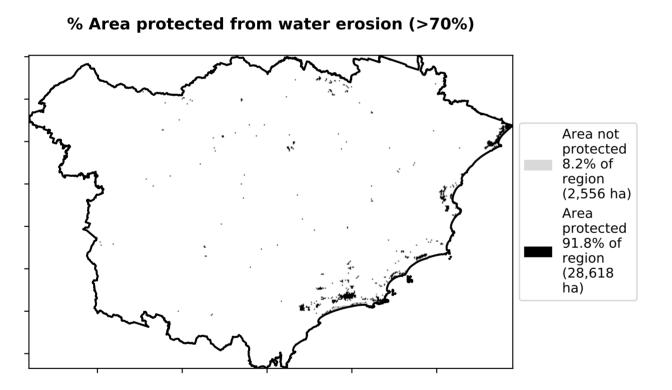


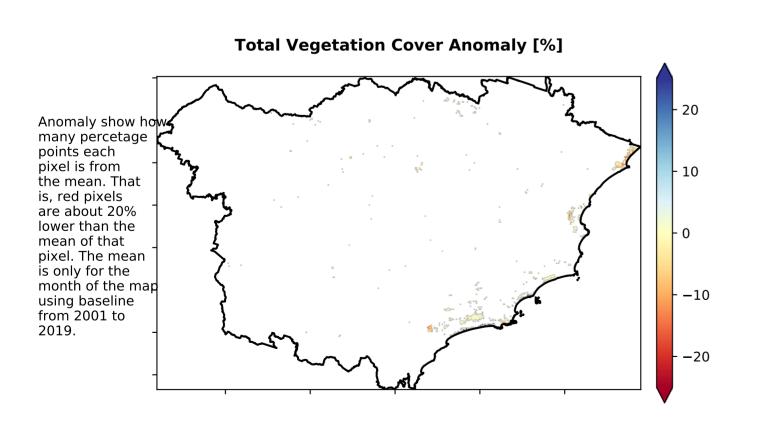


Conservation and natural environments non forest



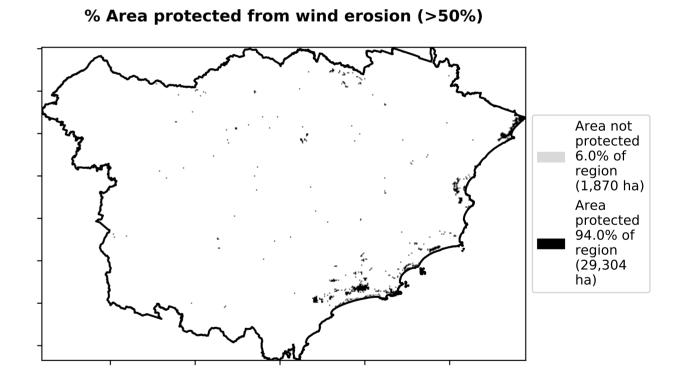
Total Vegetation Cover [%]

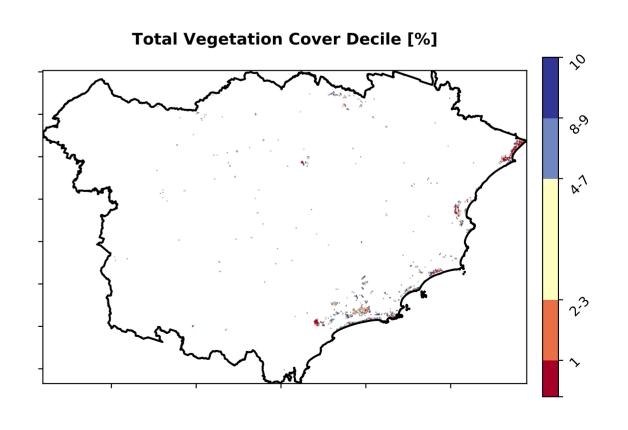




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 91.8% 90. 80. 40. 20. 0.30% 31%-50% Total Vegetation Cover class 71%-100% Total Vegetation Cover class





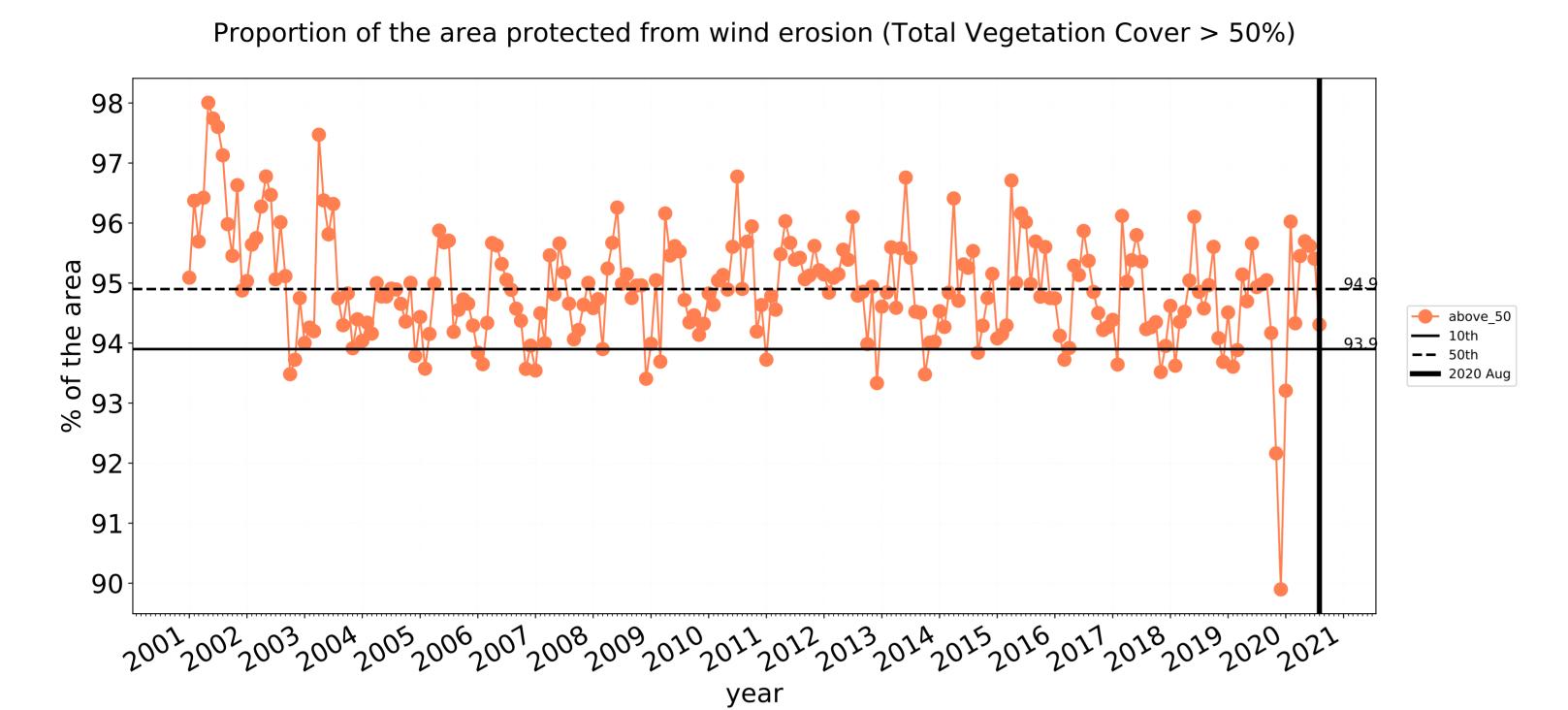


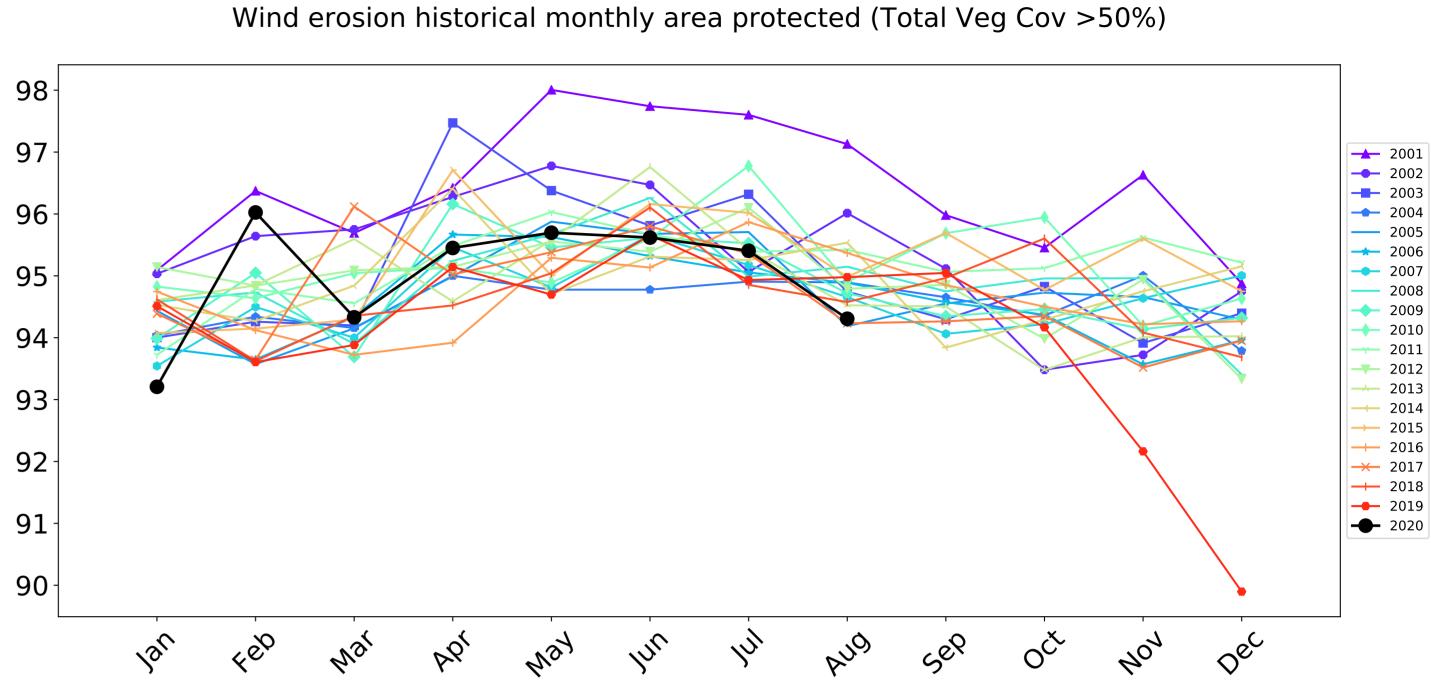






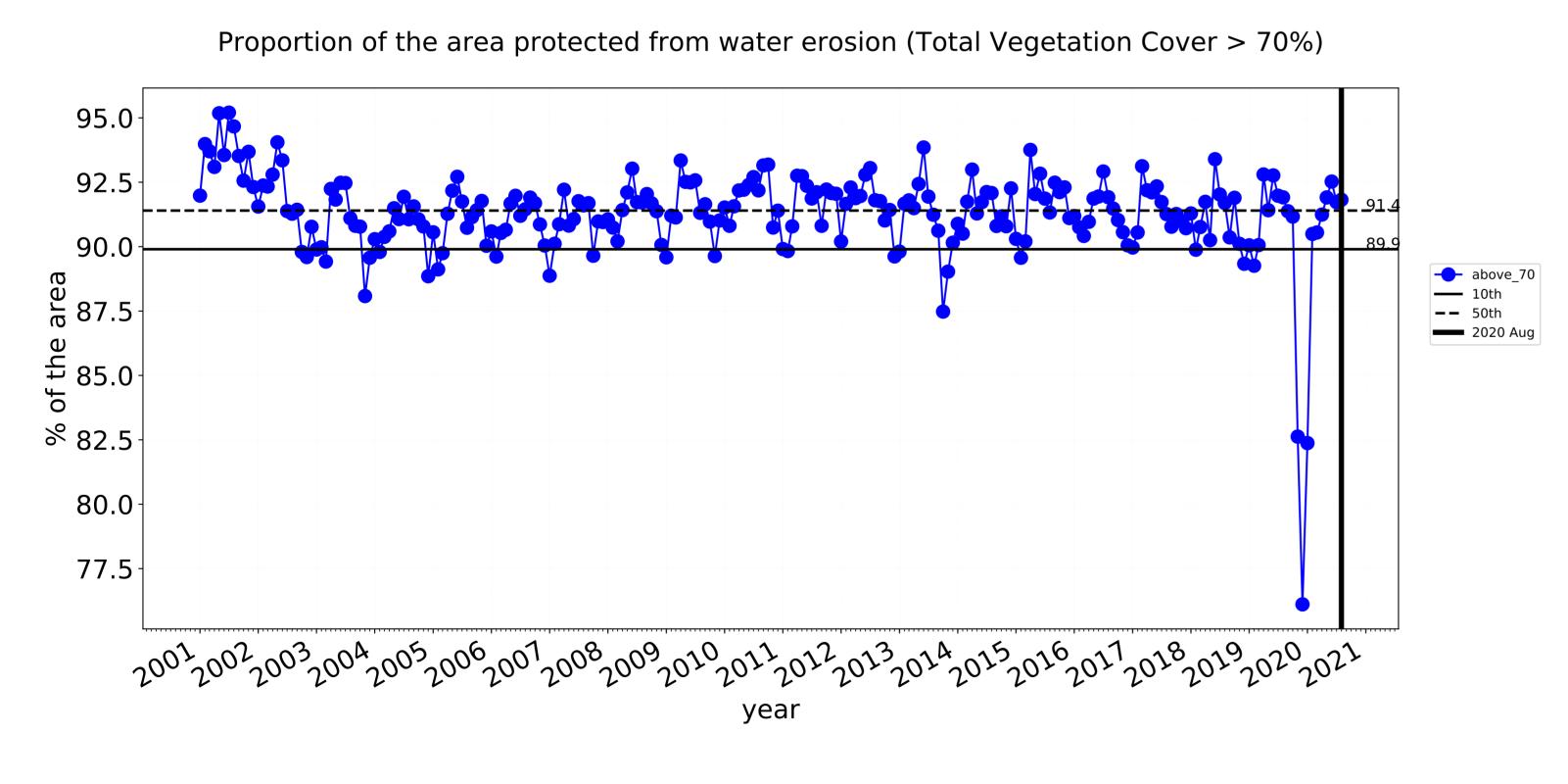
Conservation and natural environments non forest timeseries

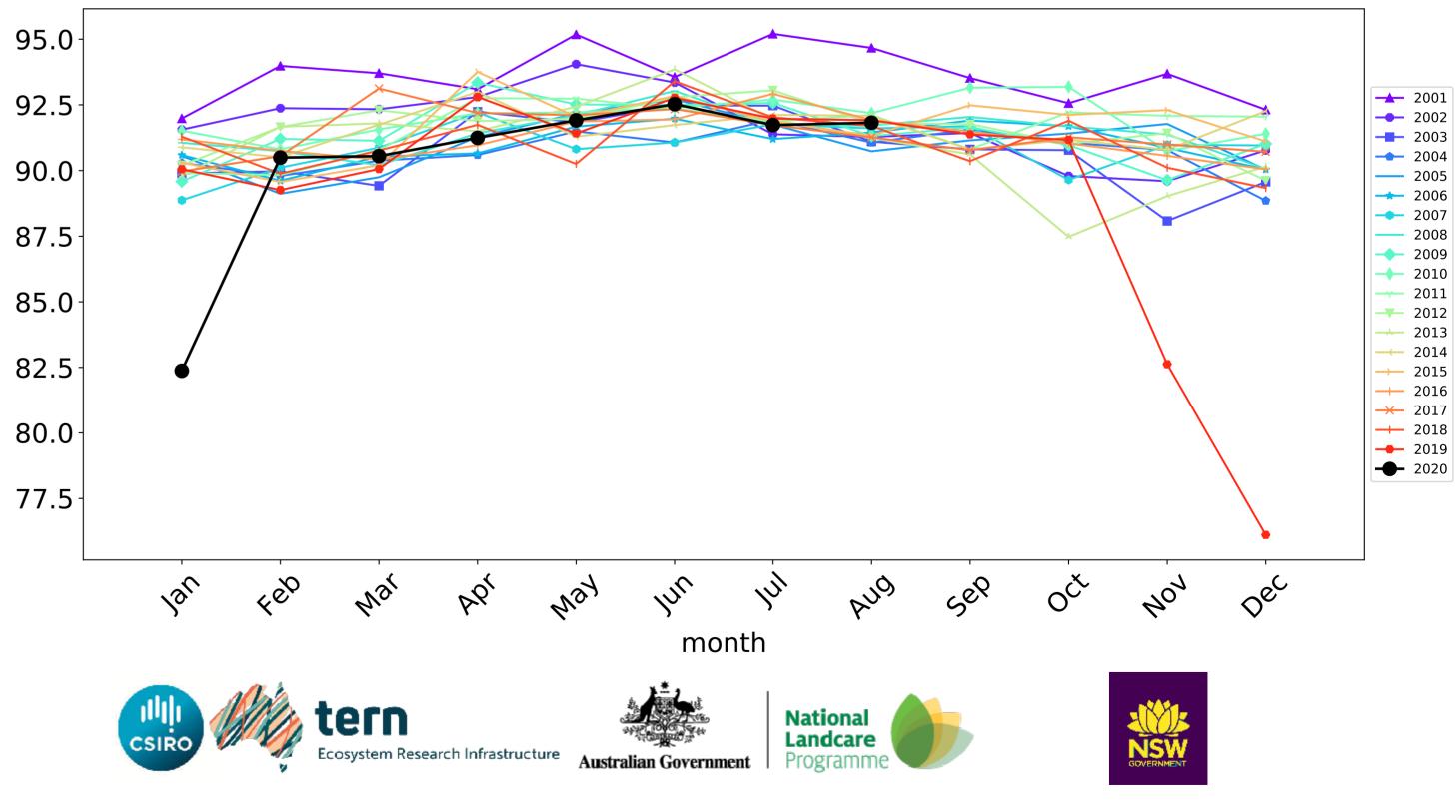


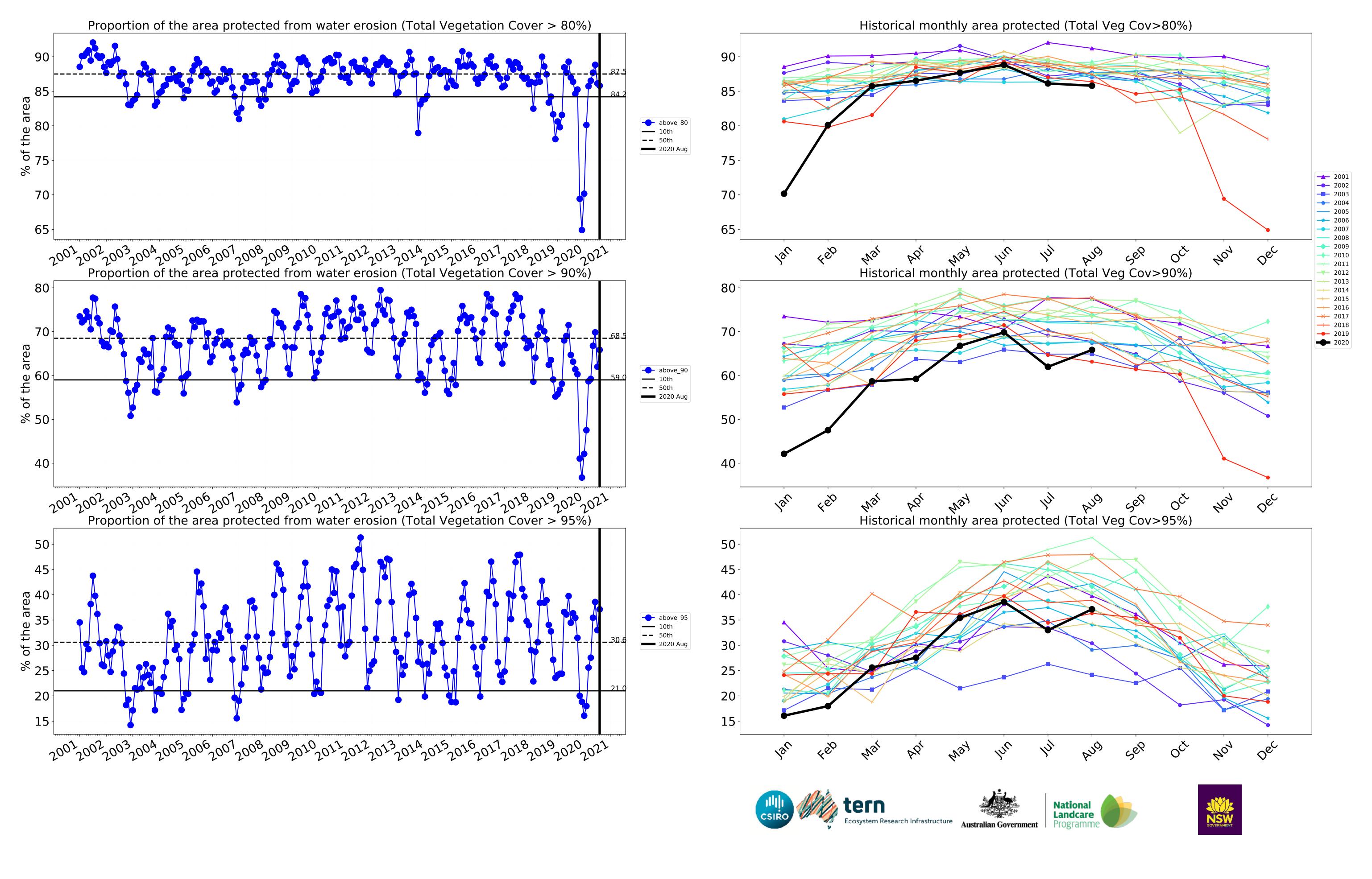


month

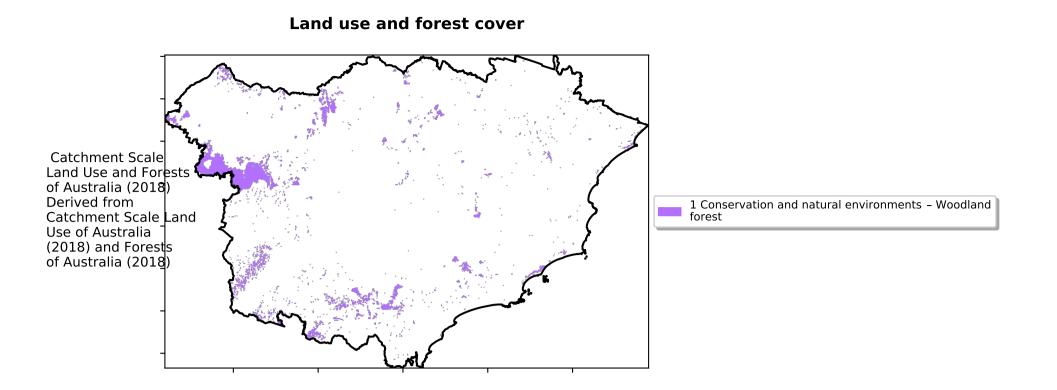
Water erosion historical monthly area protected (Total Veg Cov>70%)

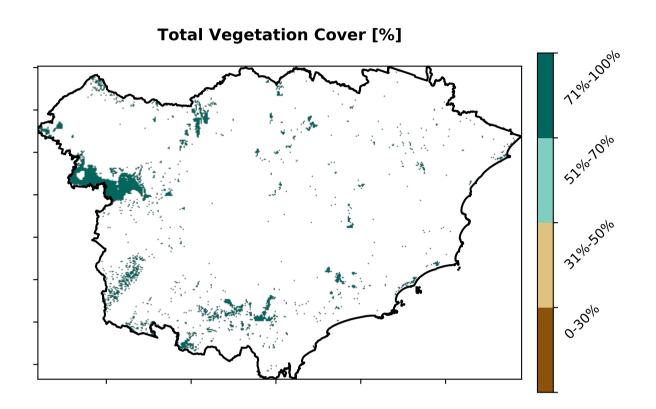


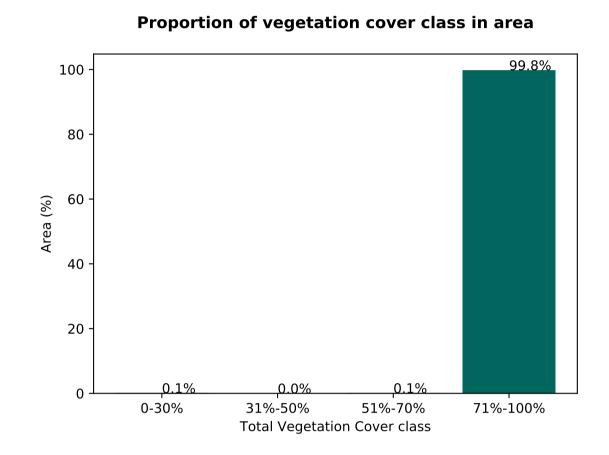


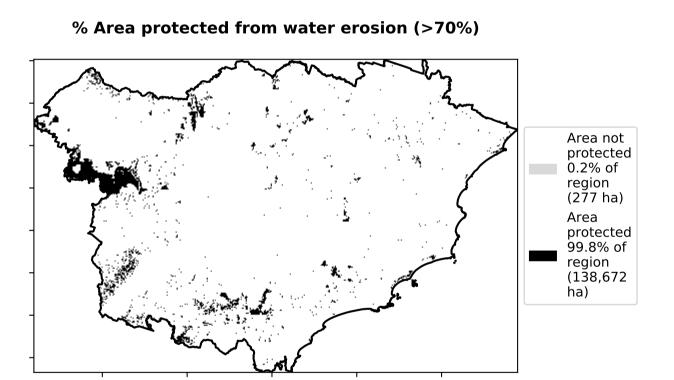


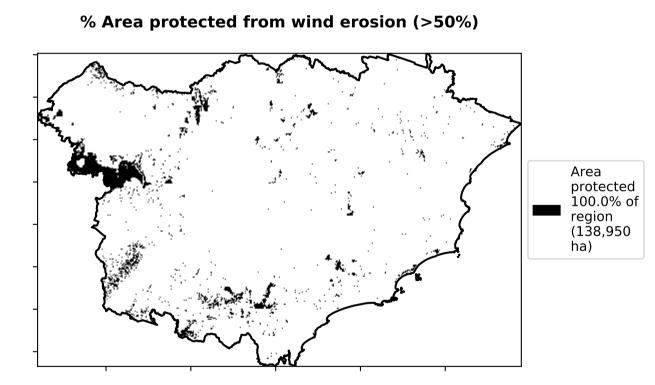
Conservation and natural environments Woodland forest

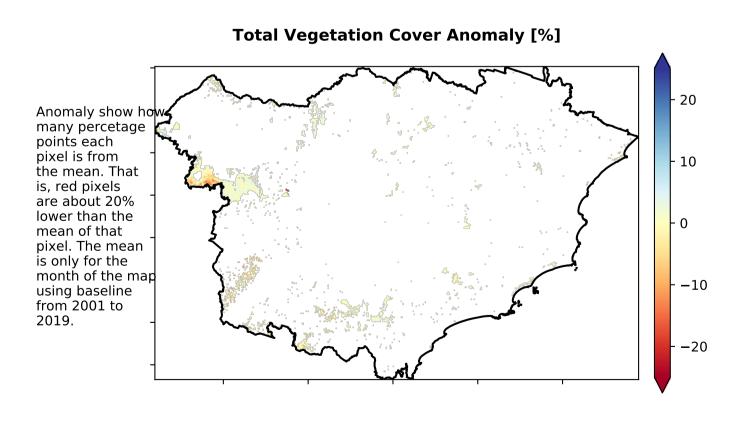


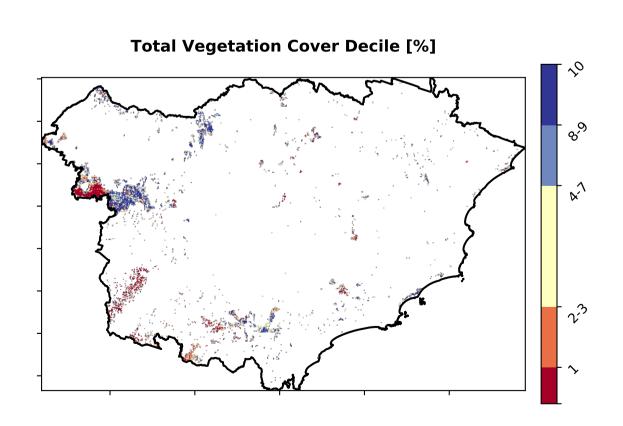












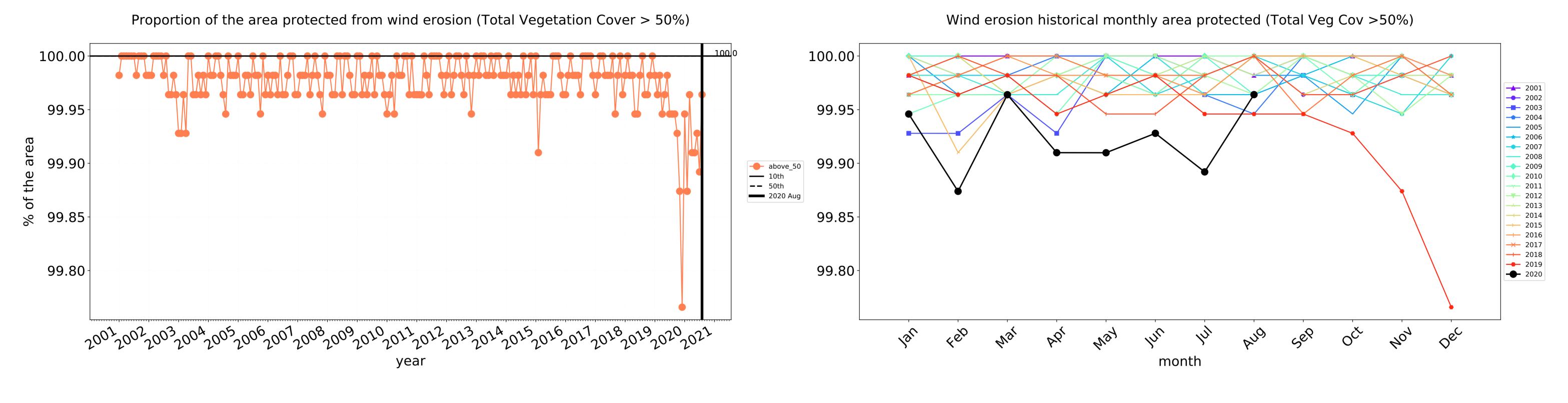


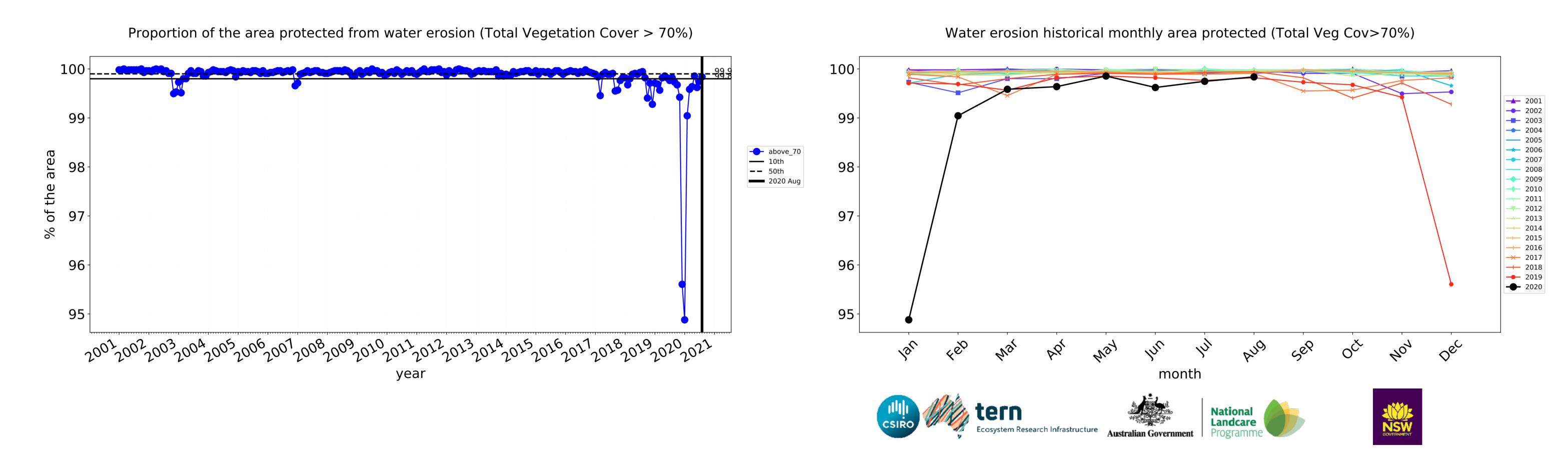


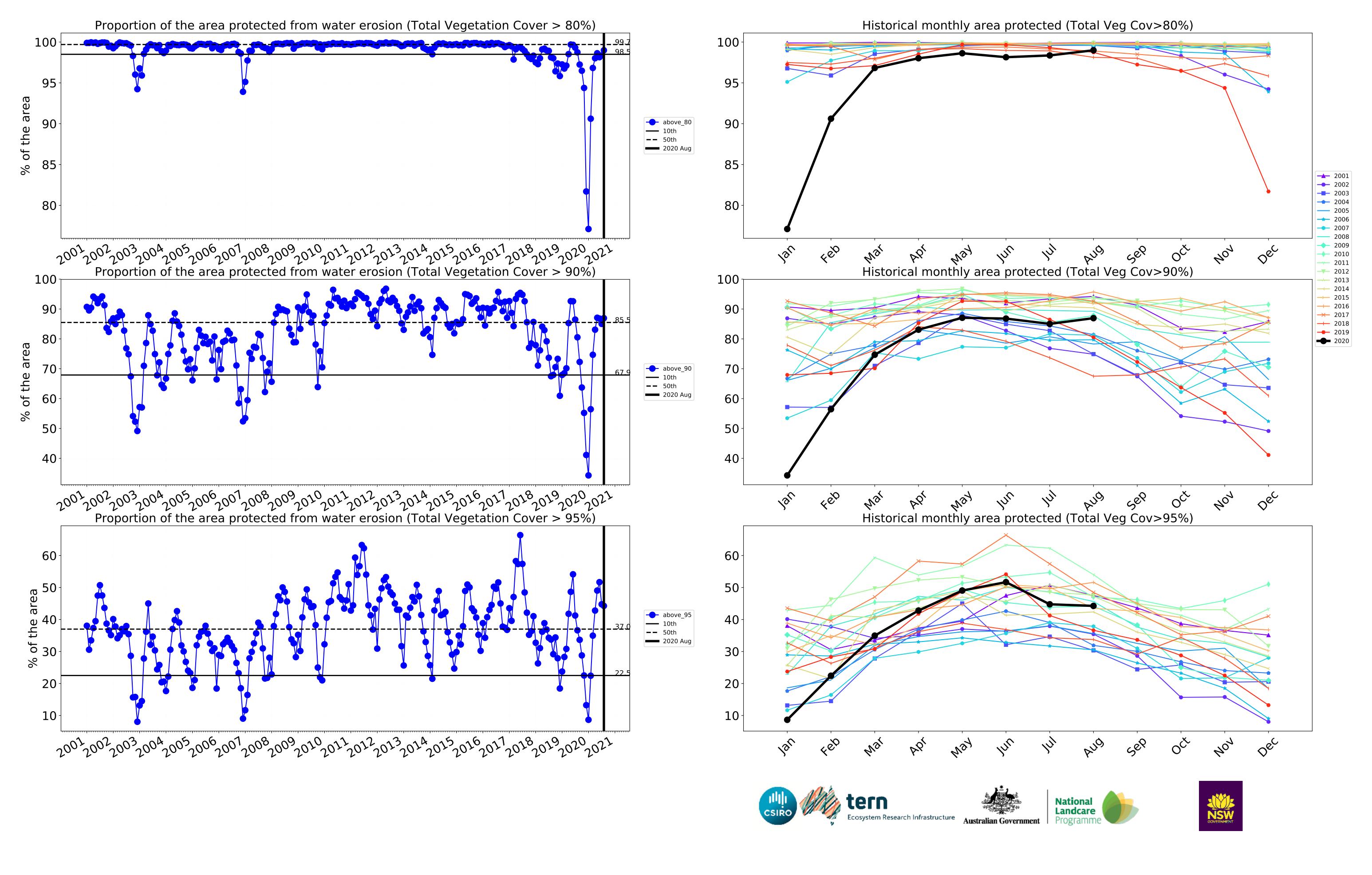




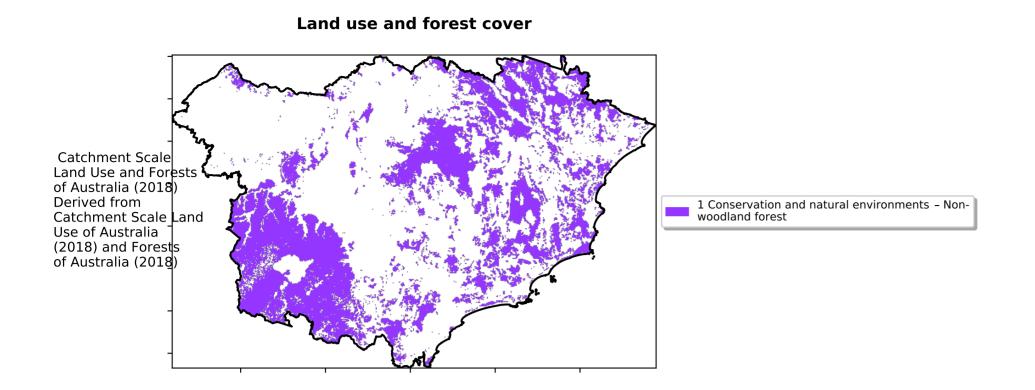
Conservation and natural environments Woodland forest timeseries



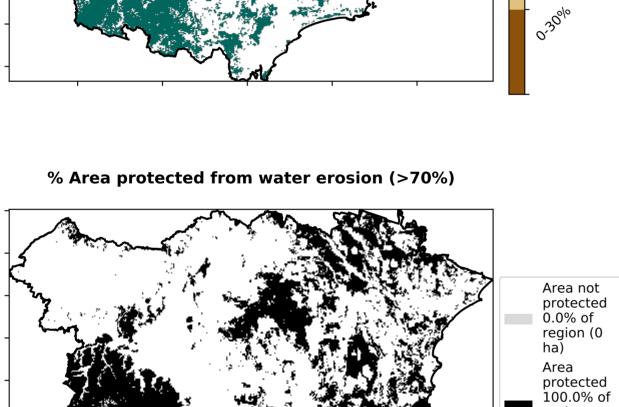


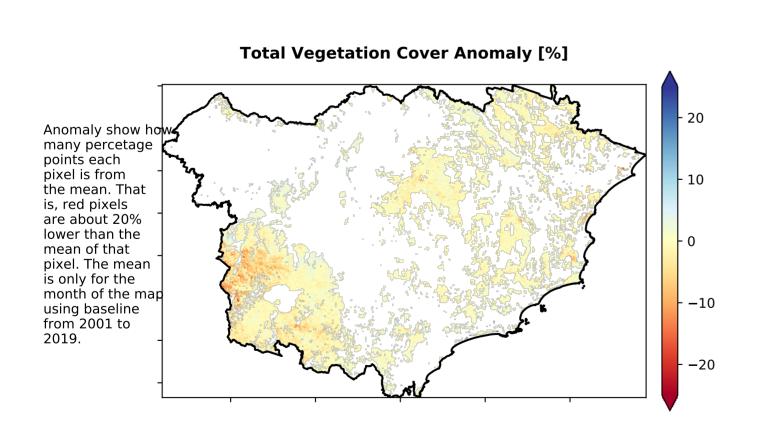


Conservation and natural environments Forest (non woodland)

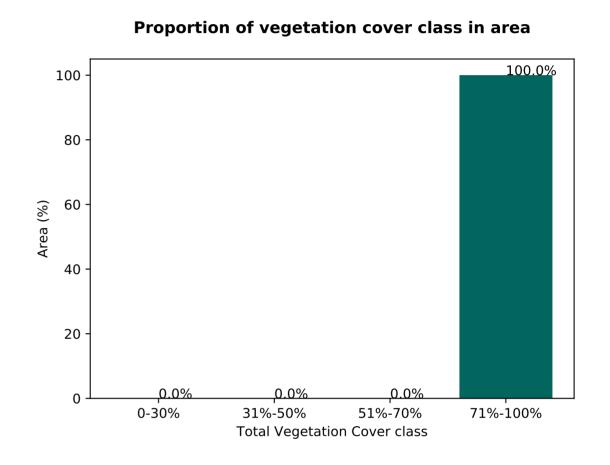


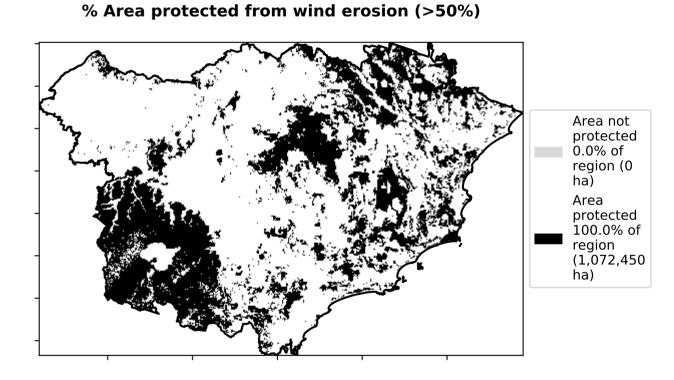
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]

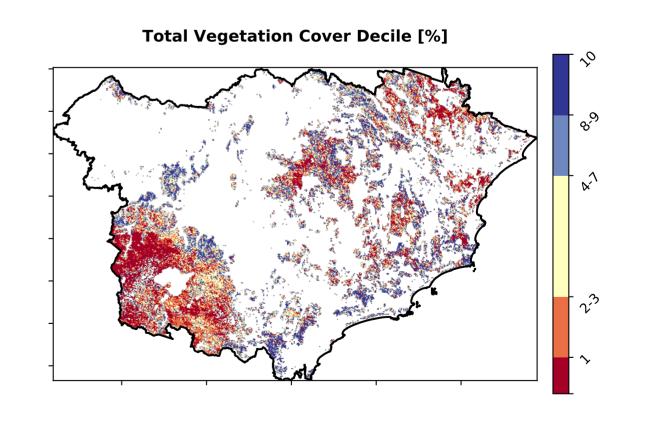




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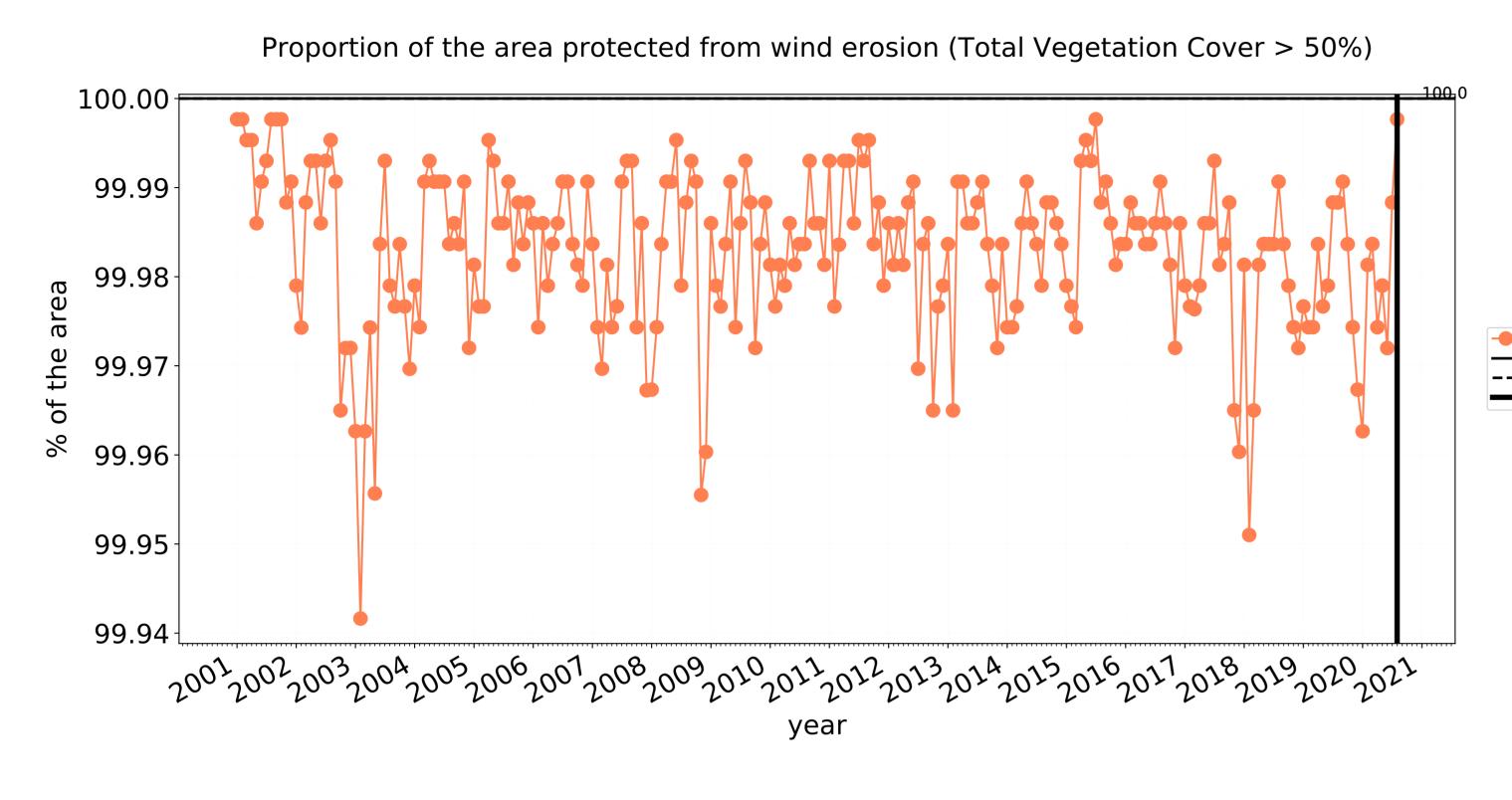


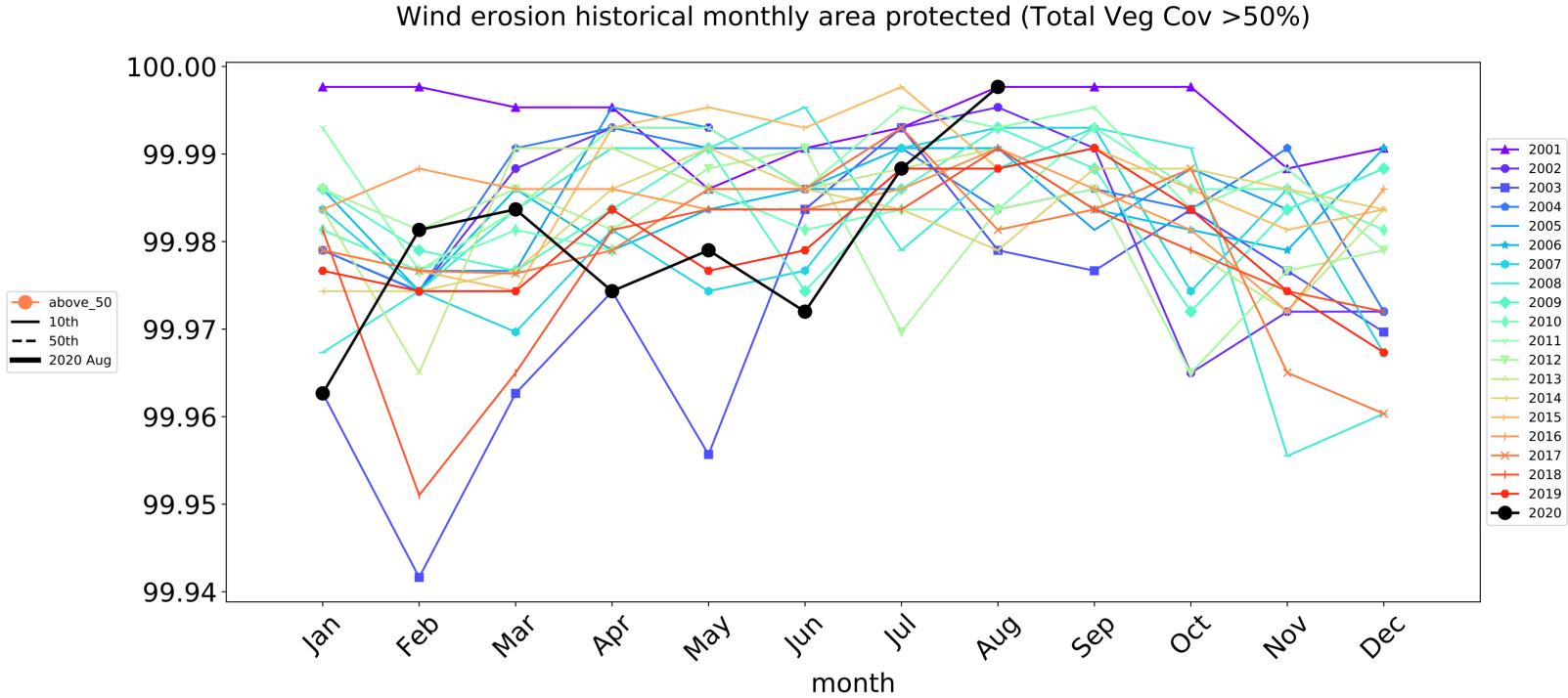


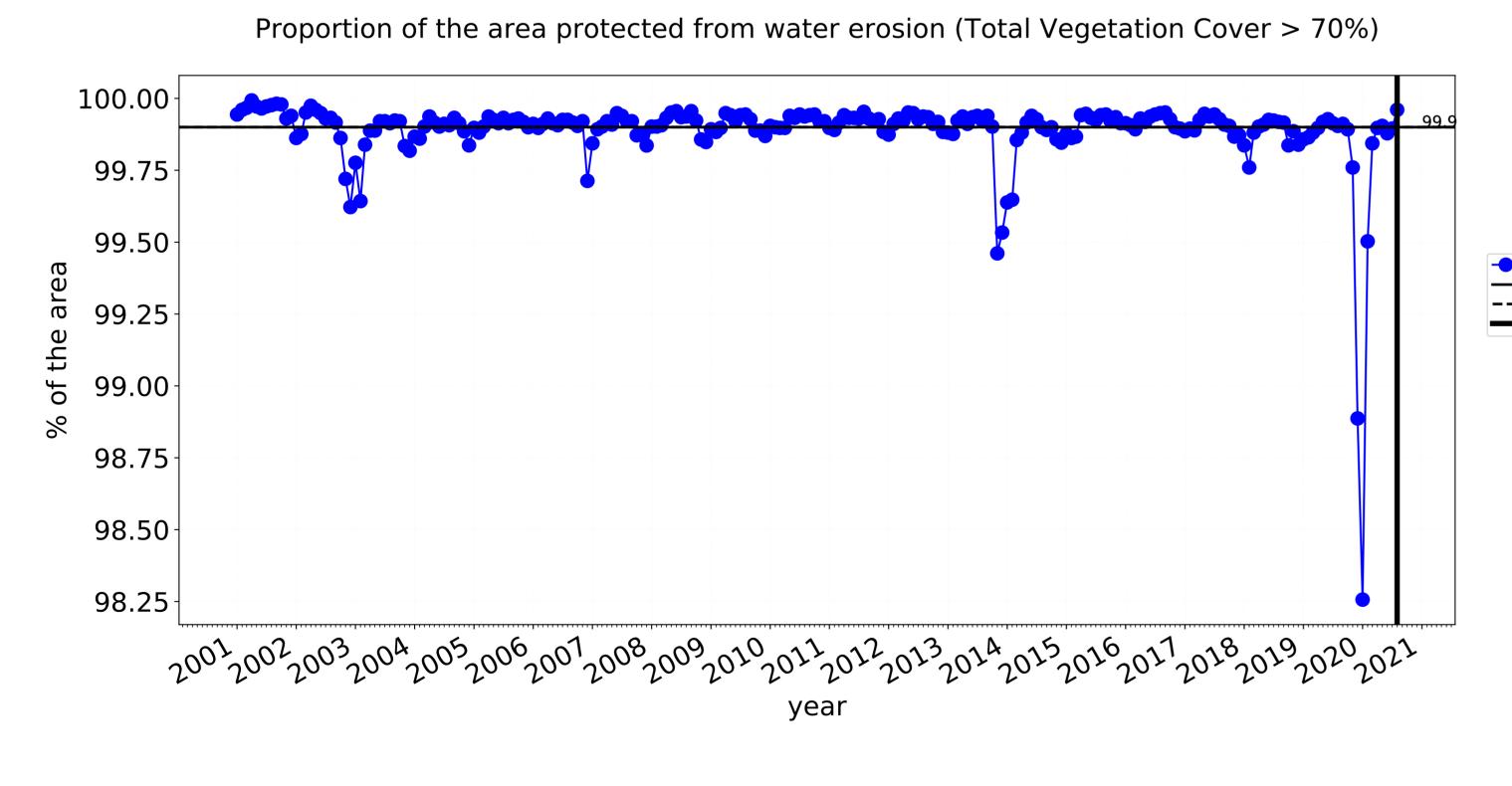


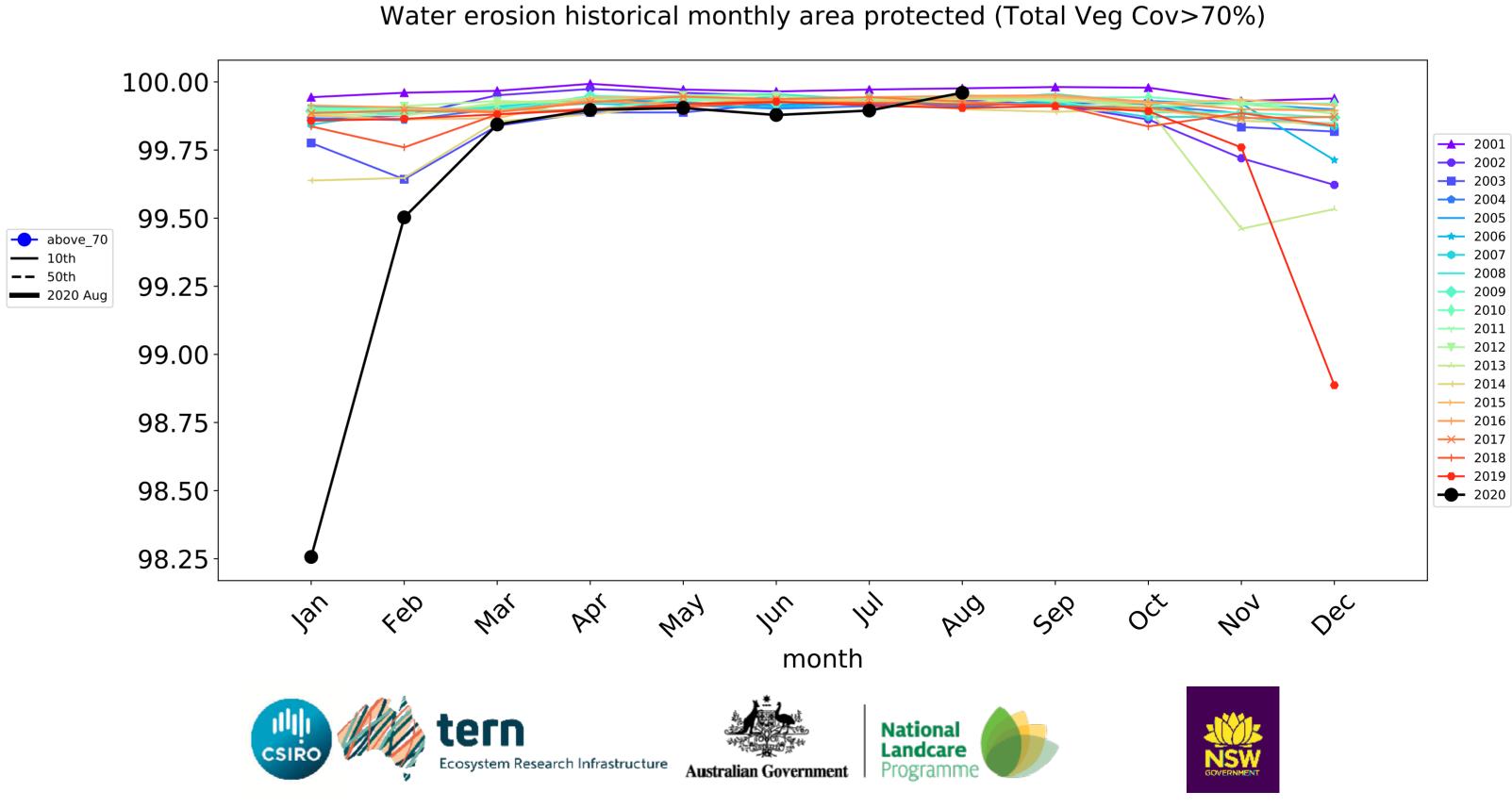
region (1,072,450 ha)

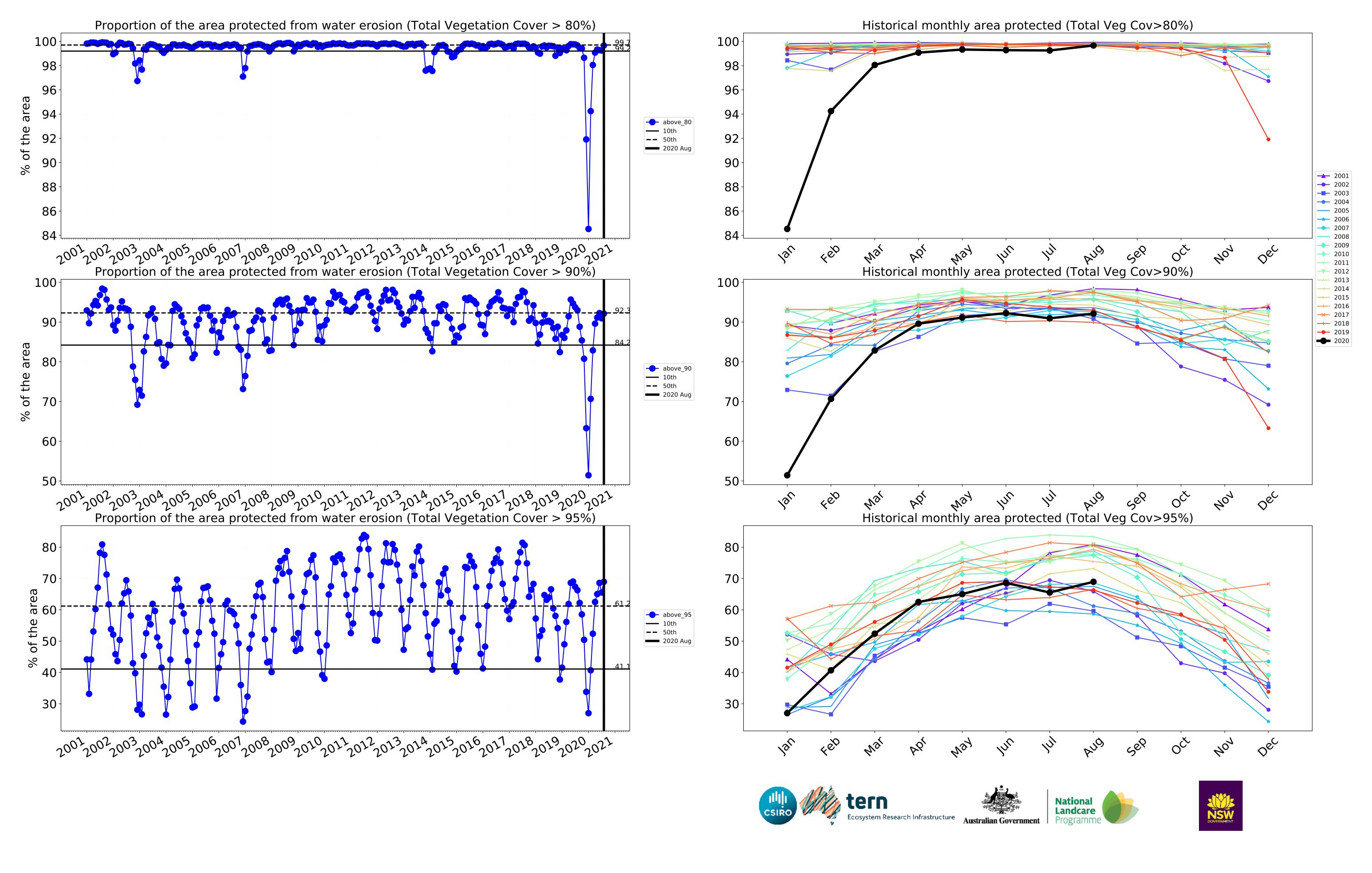
Conservation and natural environments Forest (non woodland) timeseries



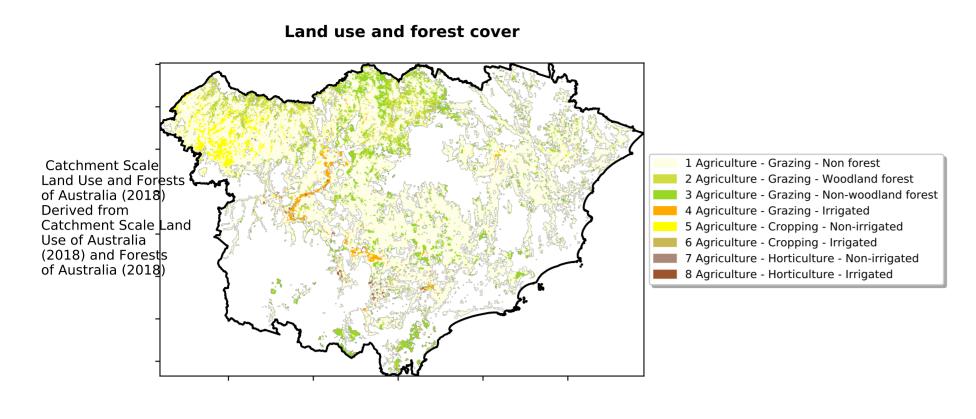


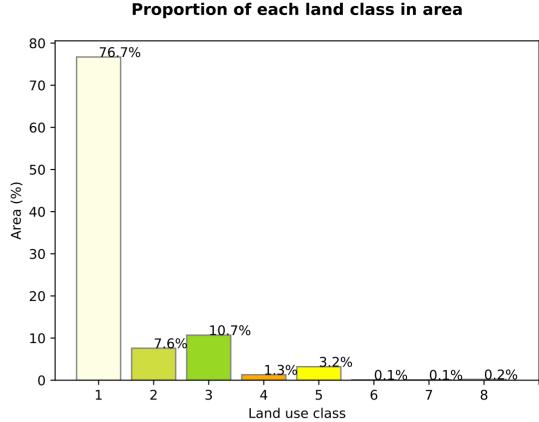


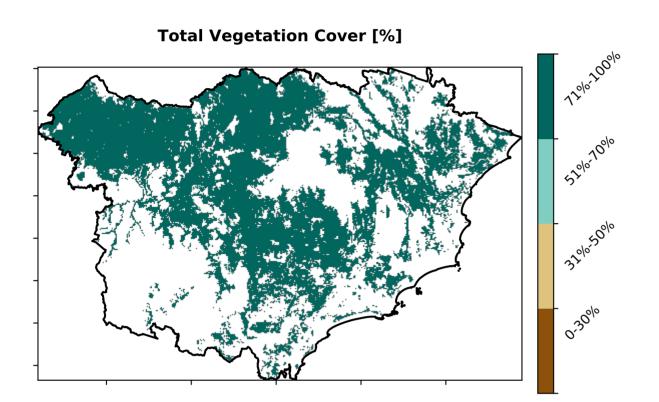


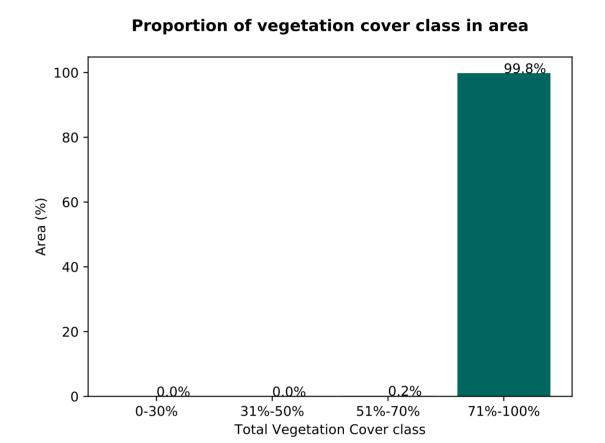


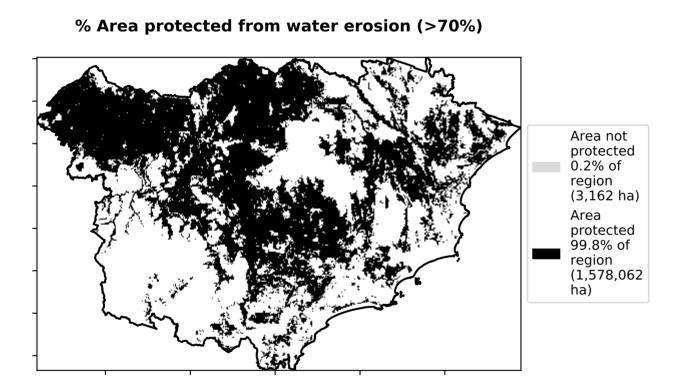
Agriculture

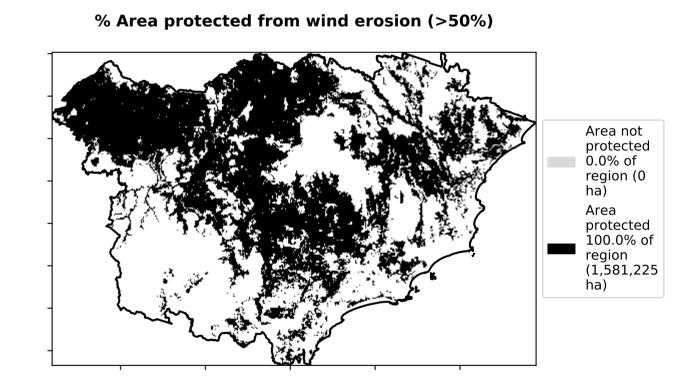


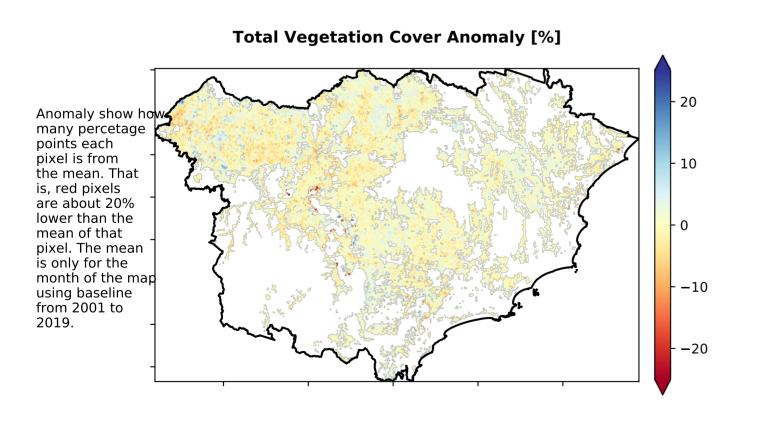


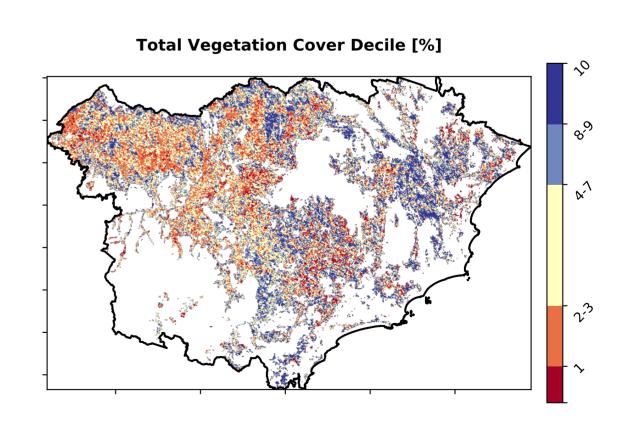












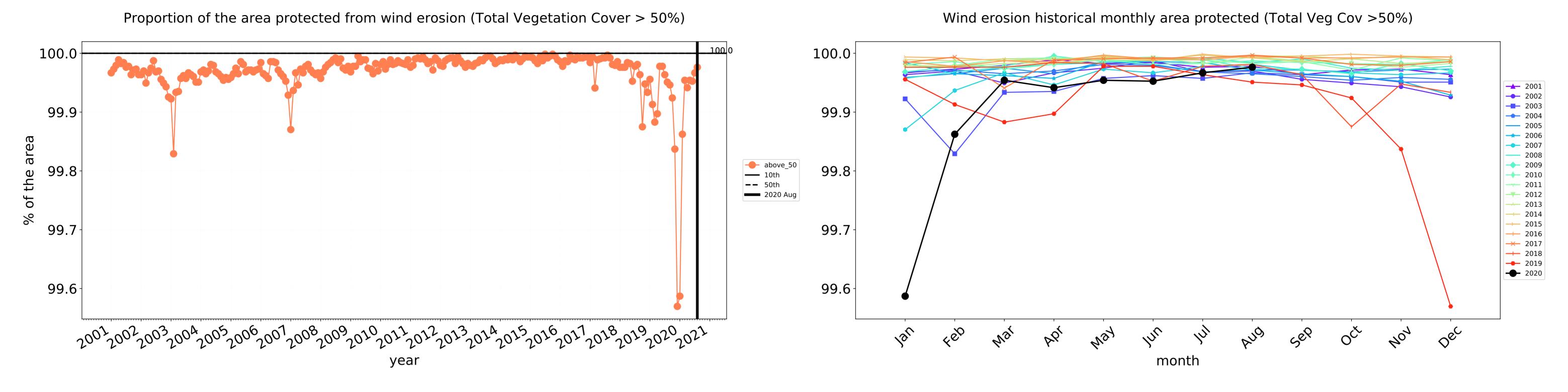


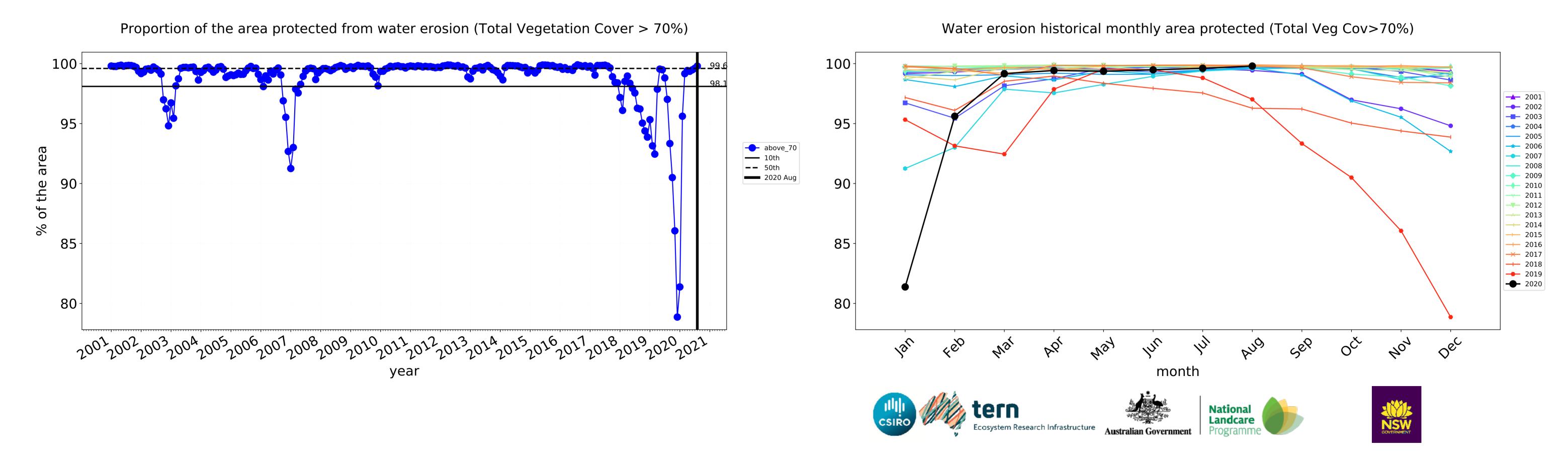


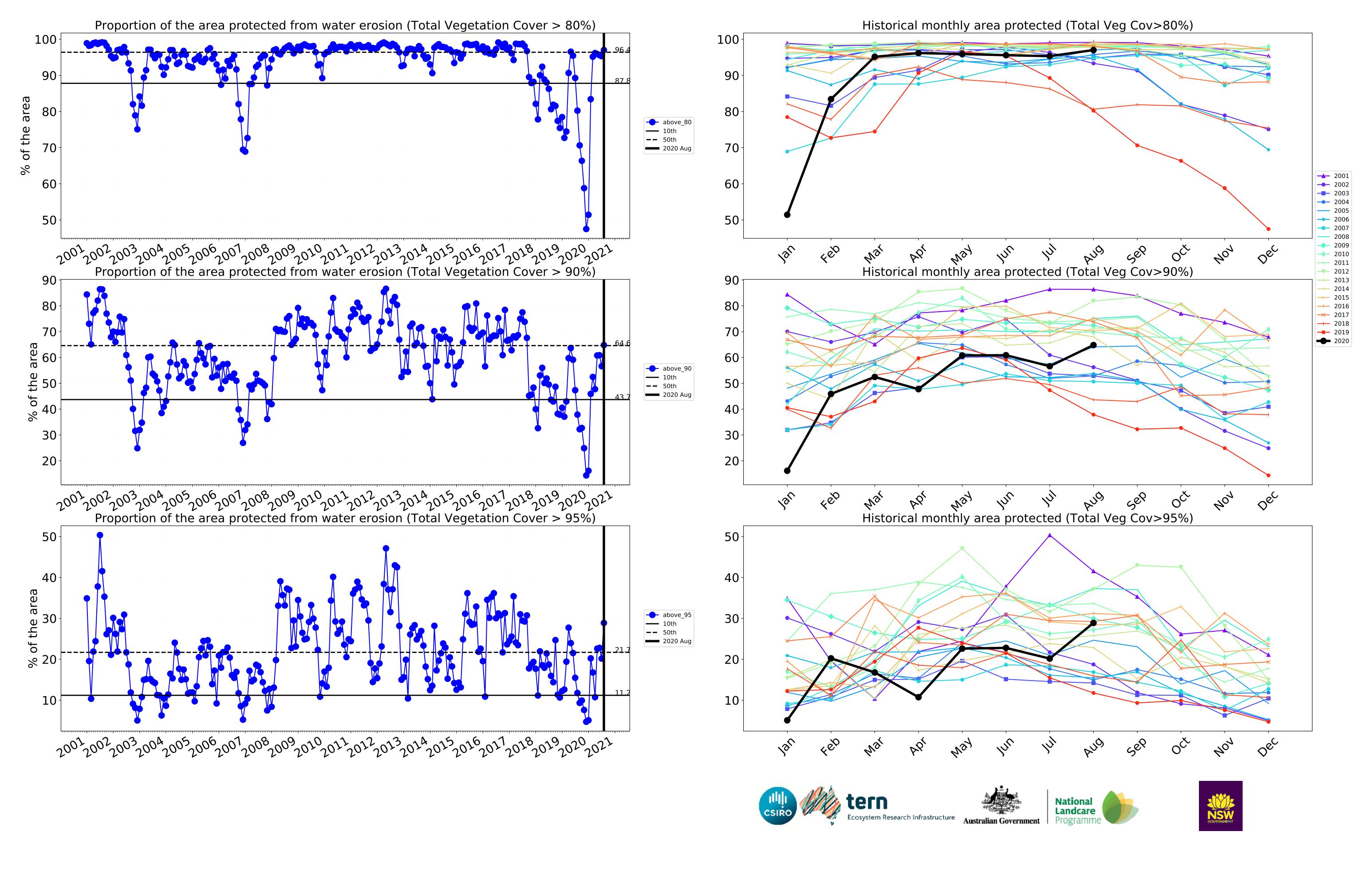




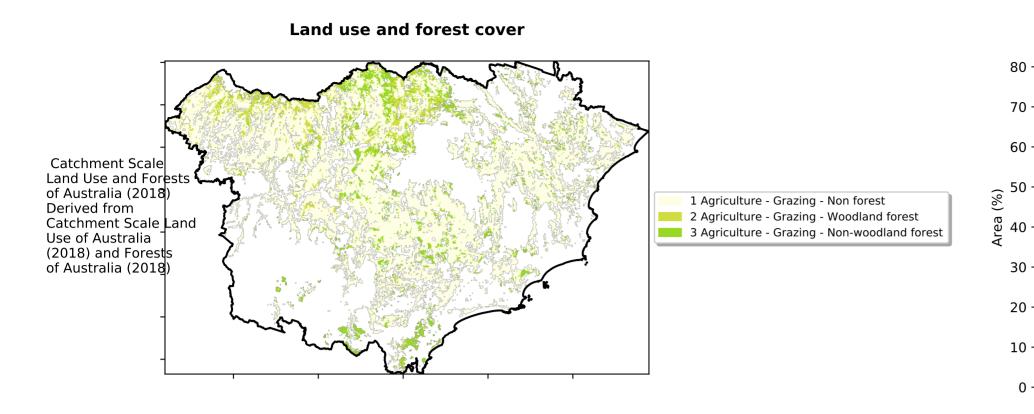
Agriculture timeseries







Grazing



80.7%

11.3%

3

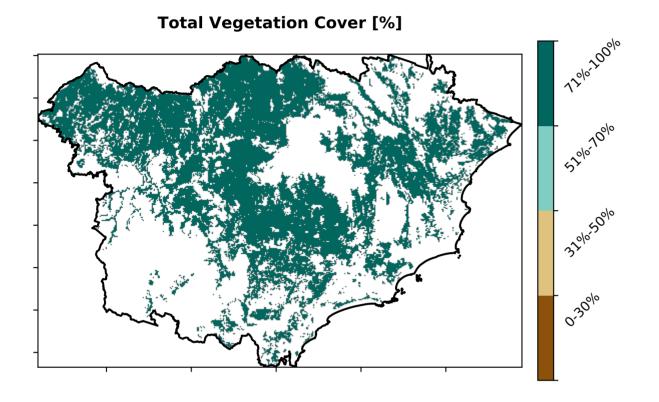
Proportion of each land class in area

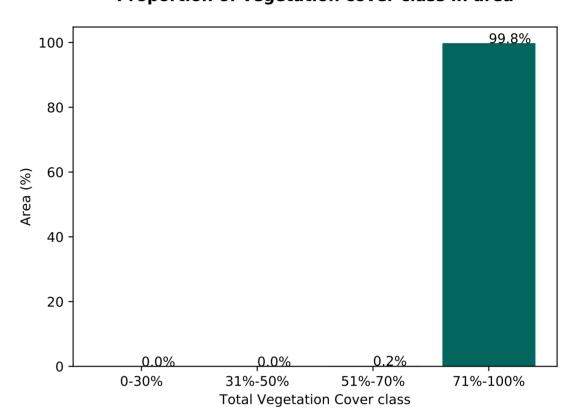
Proportion of vegetation cover class in area

Land use class

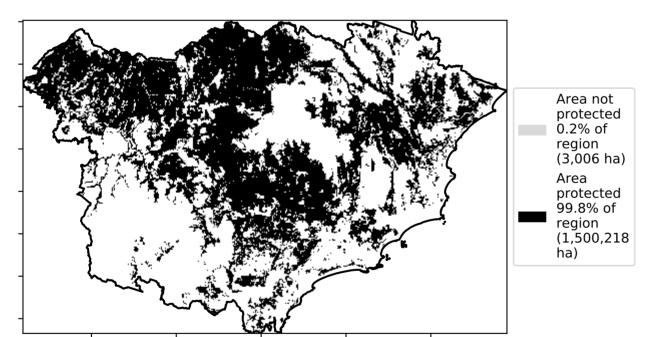
8.0%

2

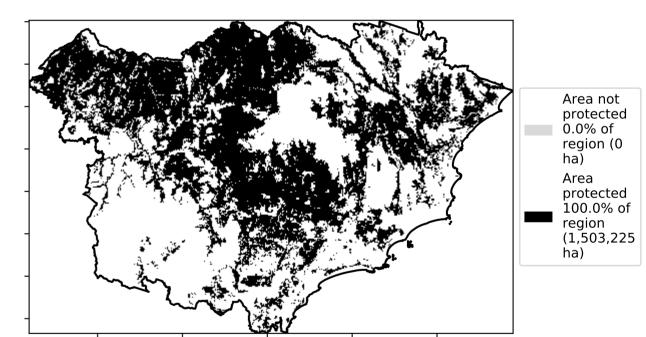




% Area protected from water erosion (>70%)



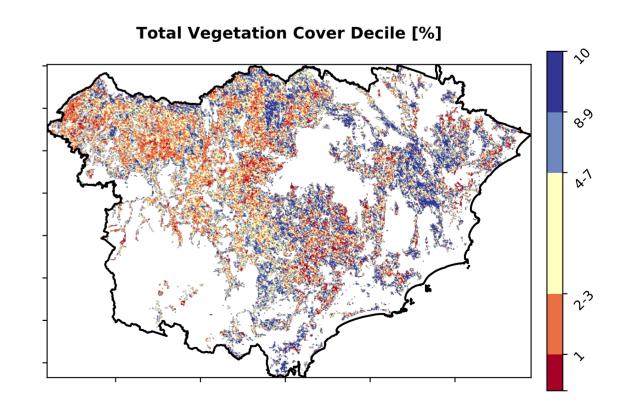
% Area protected from wind erosion (>50%)



Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the man using baseline from 2001 to 2019.

Total Vegetation Cover Anomaly [%]

Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





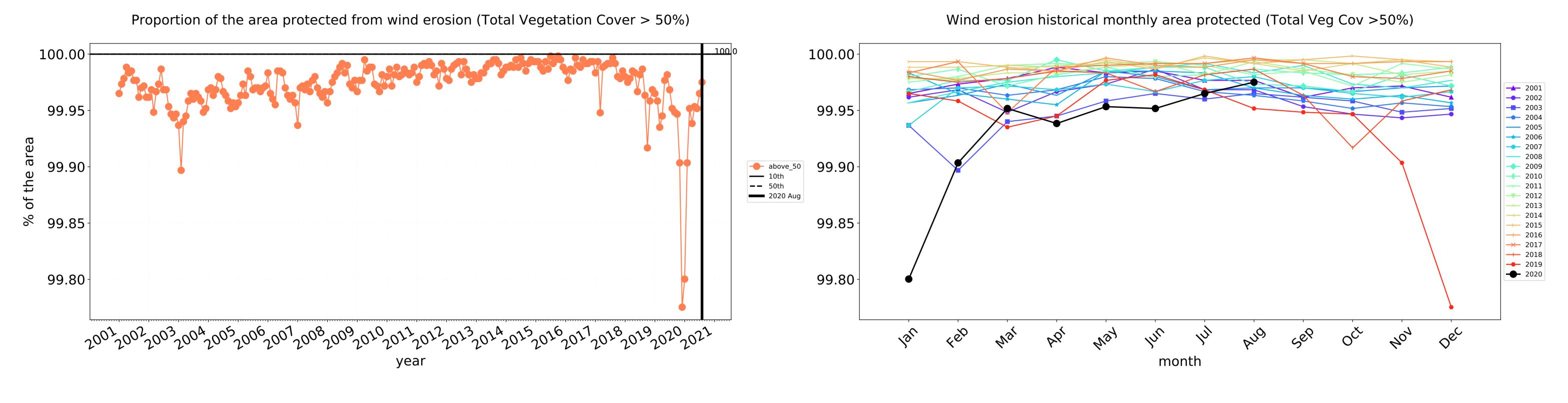


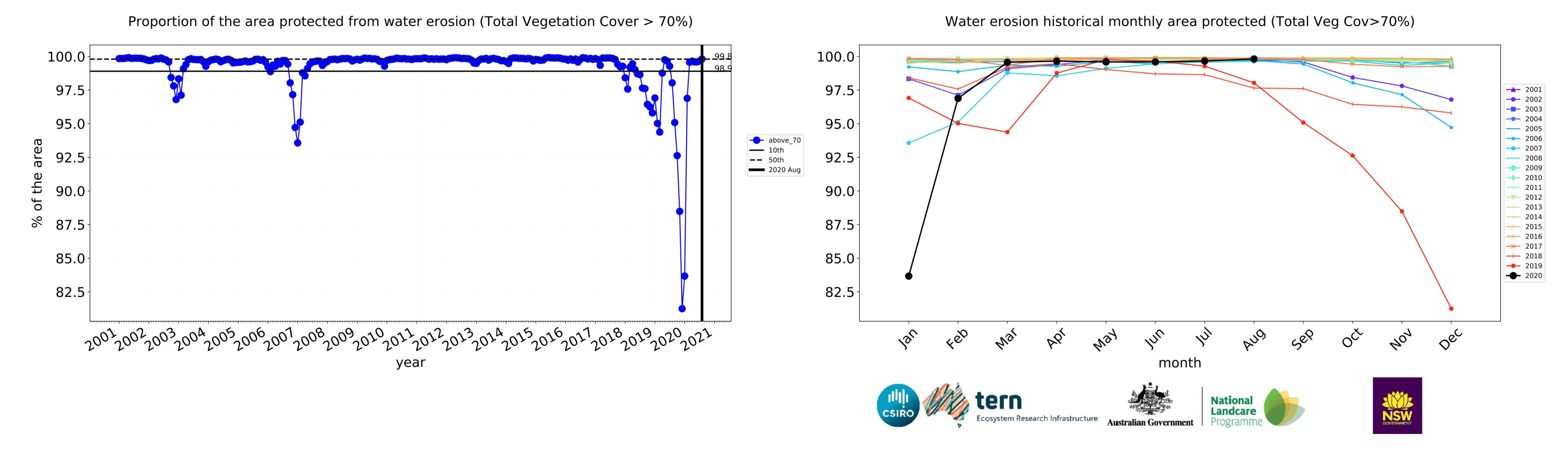


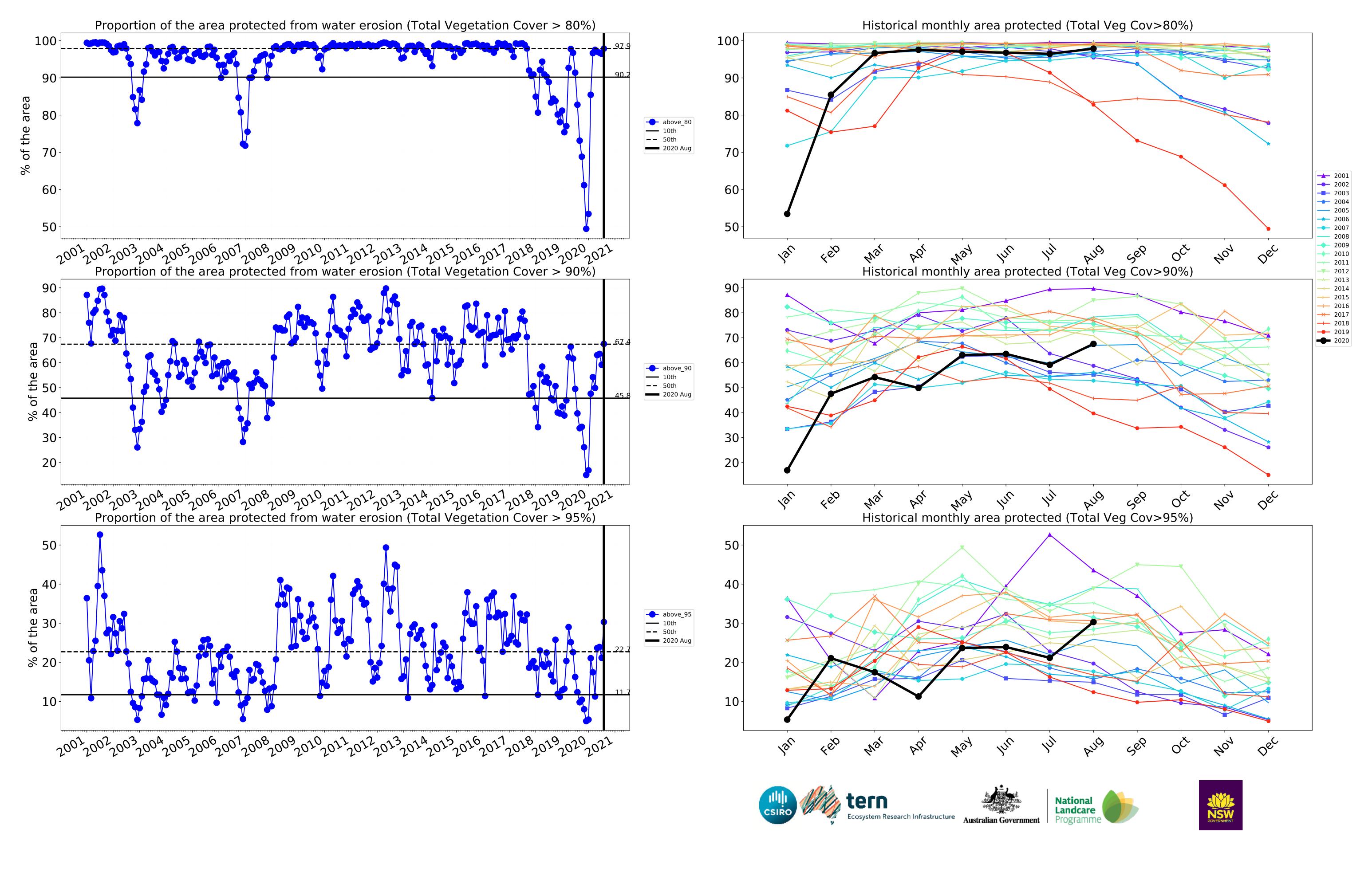


-20

Grazing timeseries

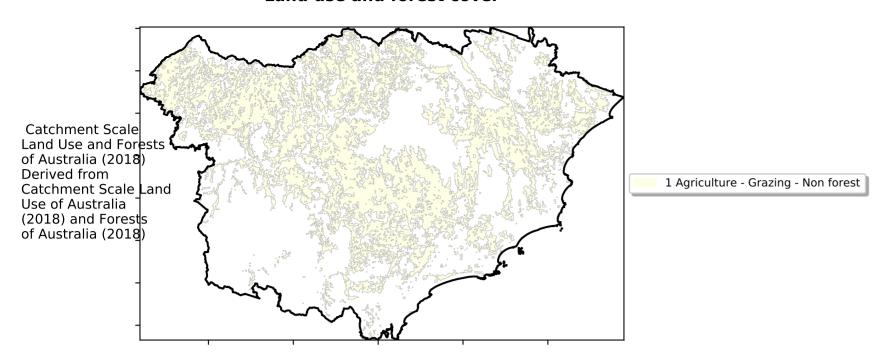




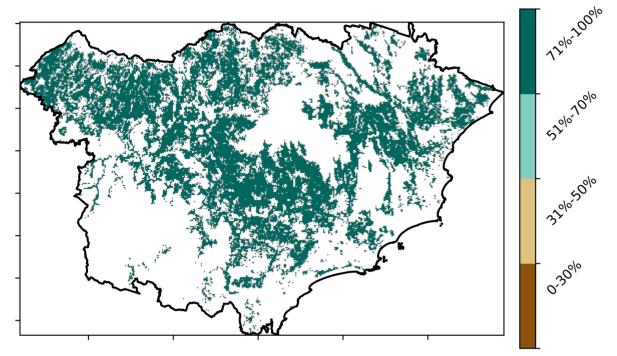


Grazing non forest

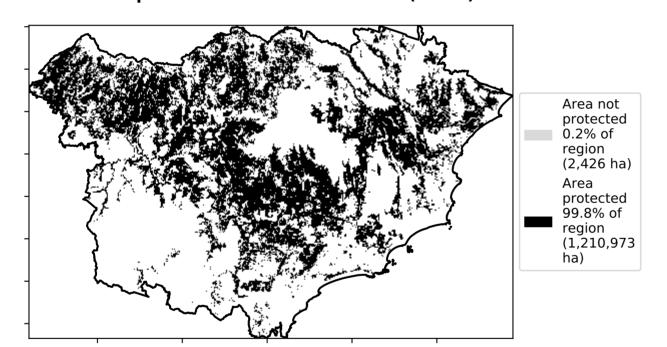
Land use and forest cover



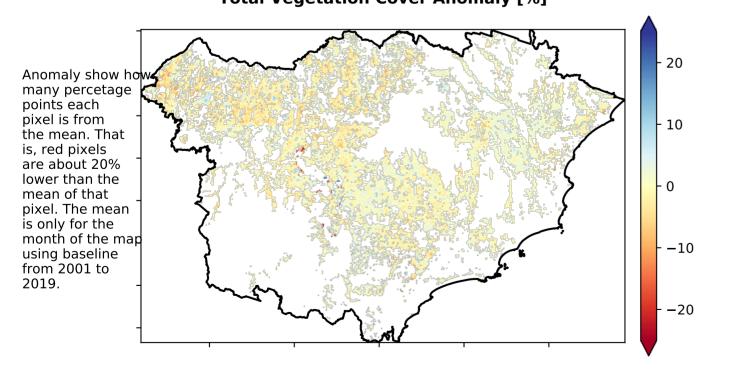
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

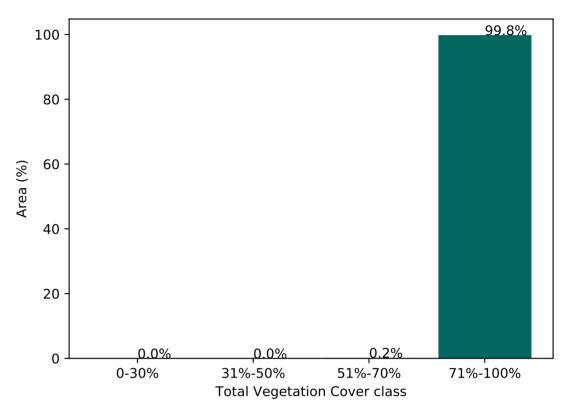


Total Vegetation Cover Anomaly [%]

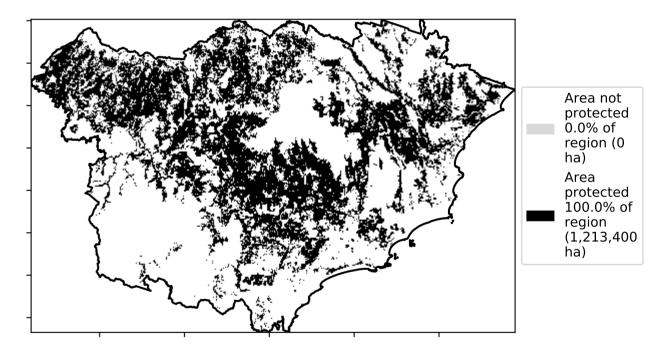


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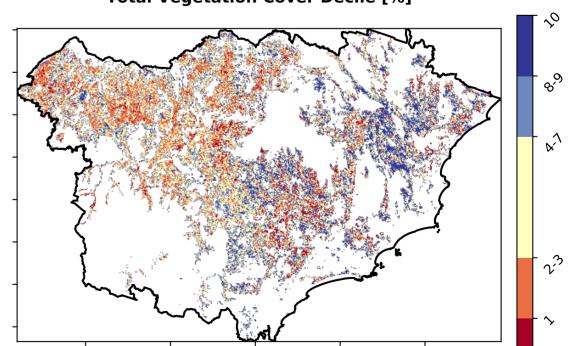
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





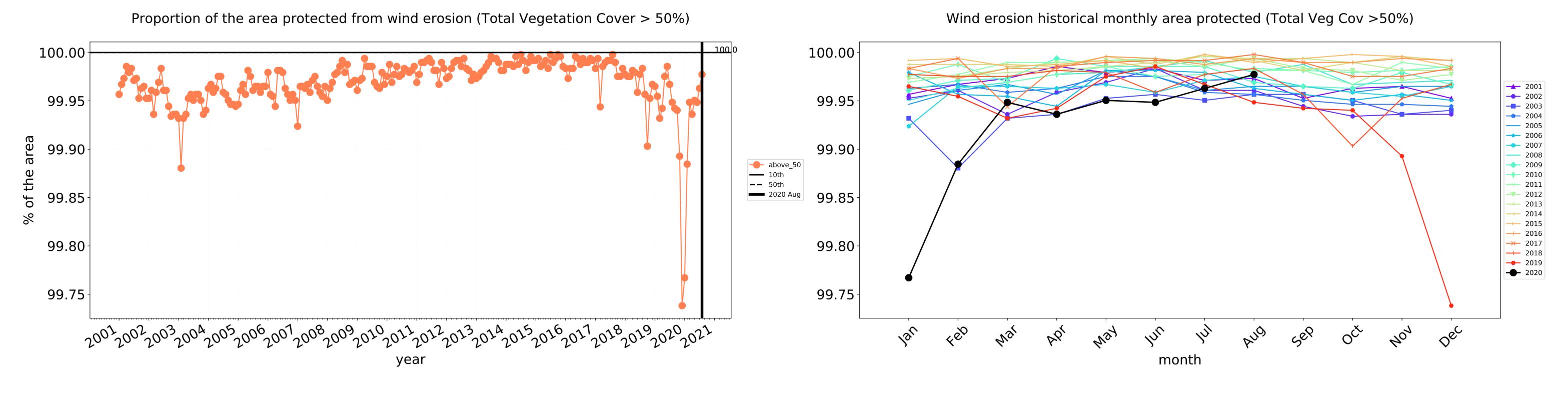


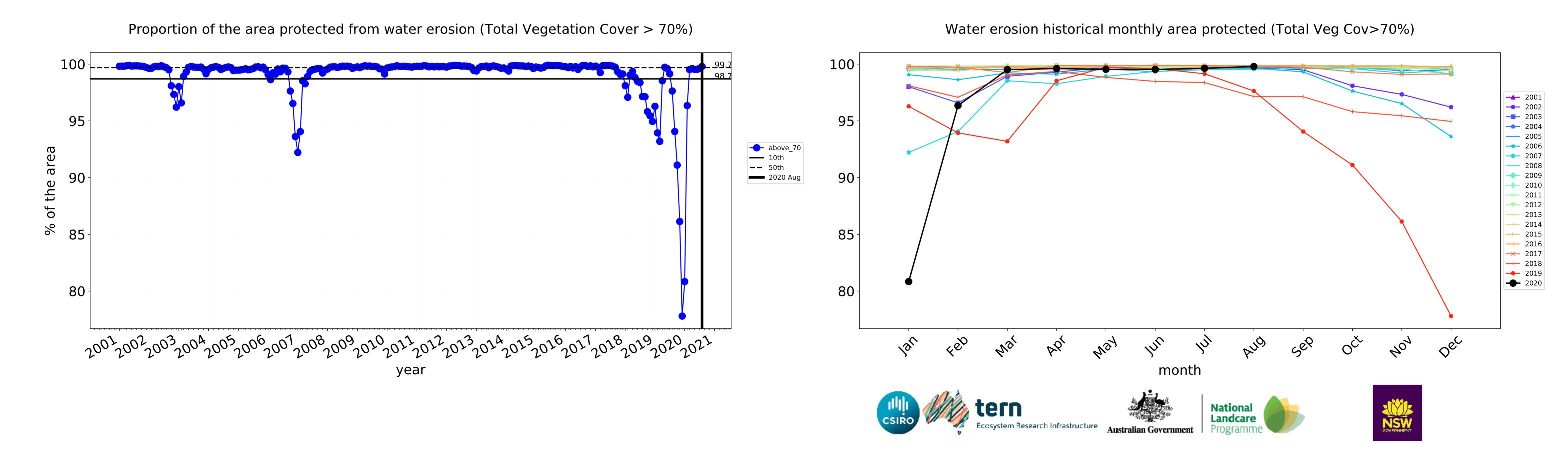


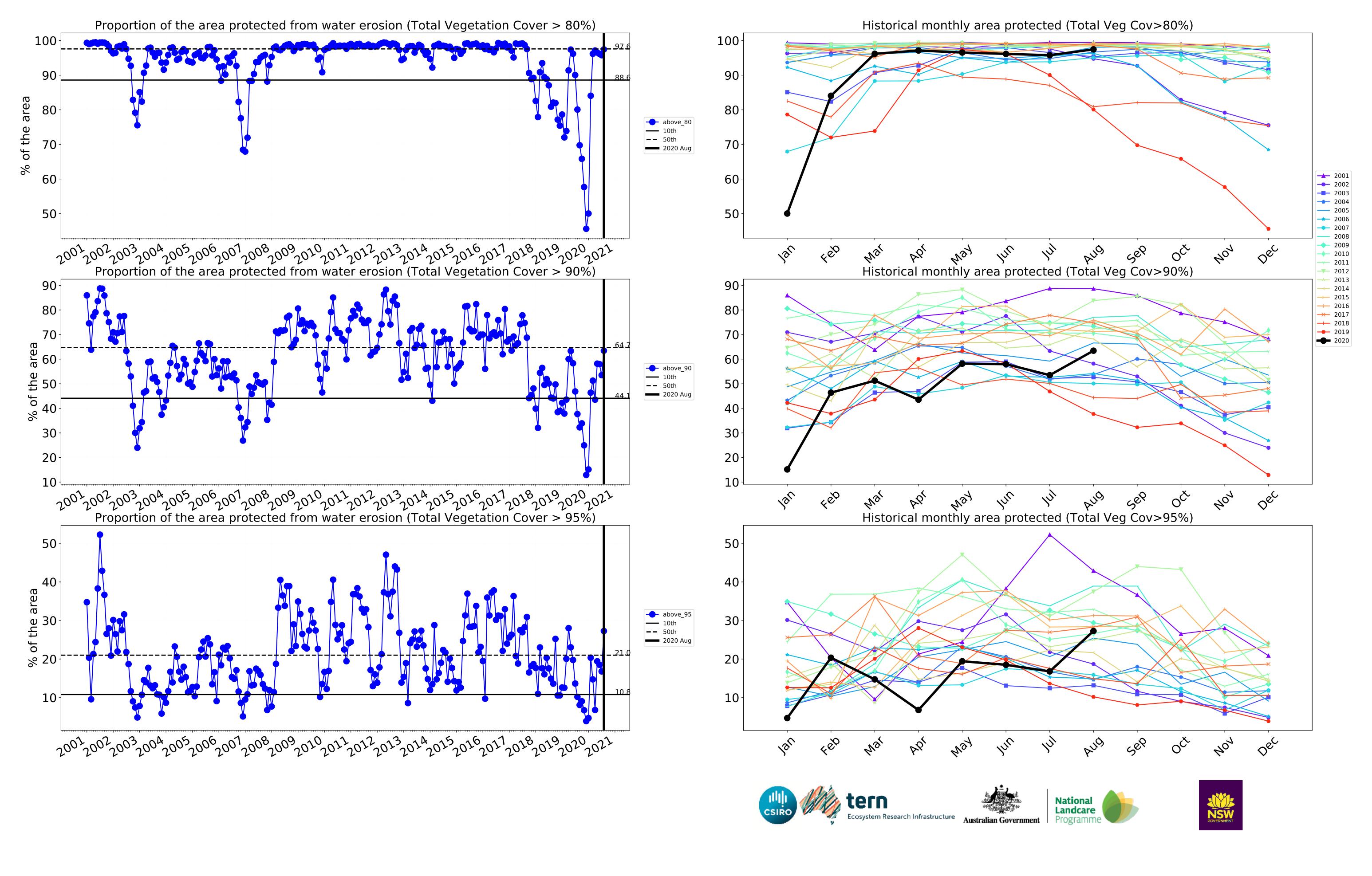




Grazing non forest timeseries





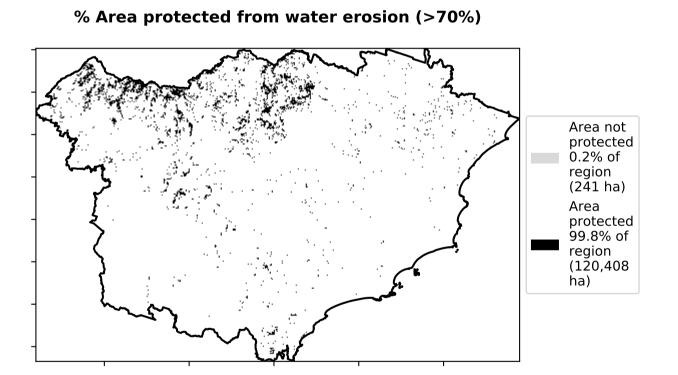


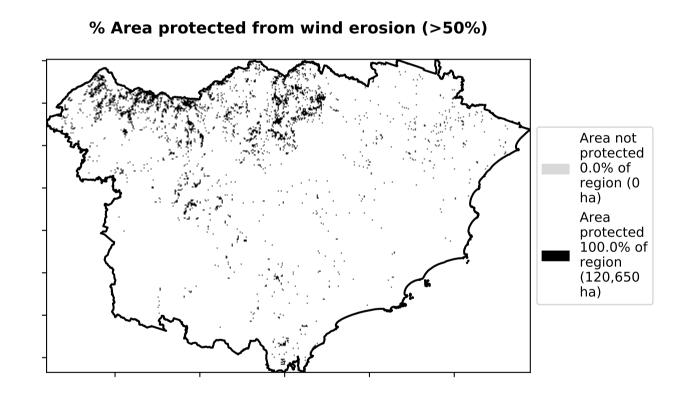
Grazing Woodland forest

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

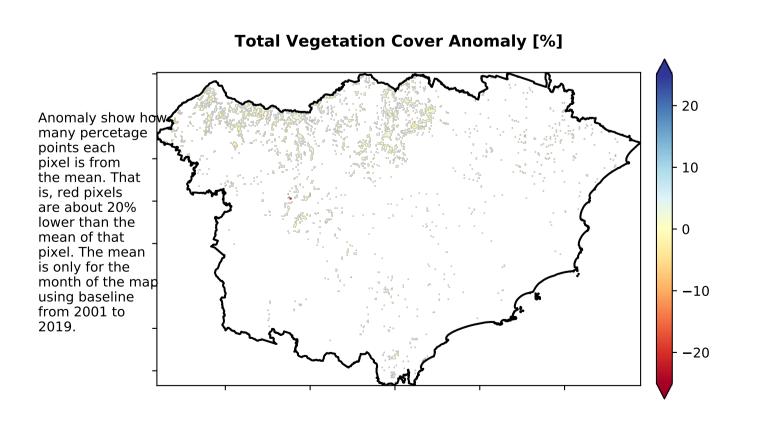
Total Vegetation Cover [%]

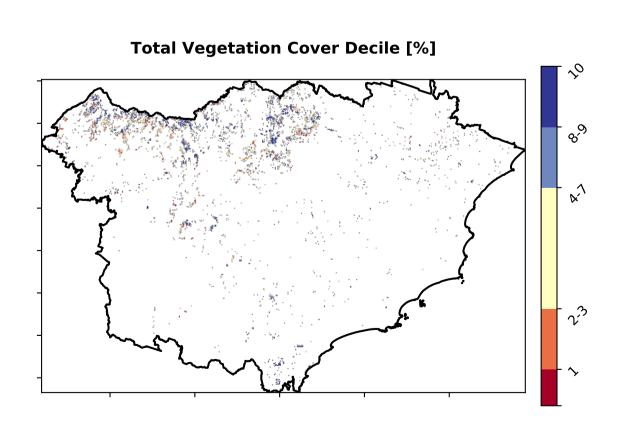
99.8% 100 80 Area (%) 40 20 -0.1% 51%-70% 0-30% 31%-50% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area





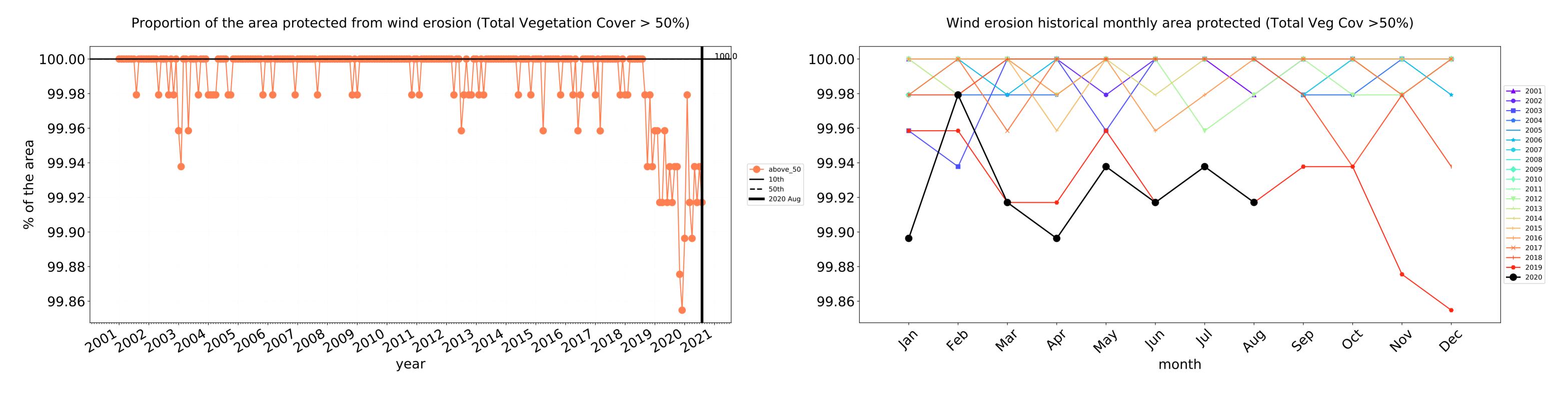


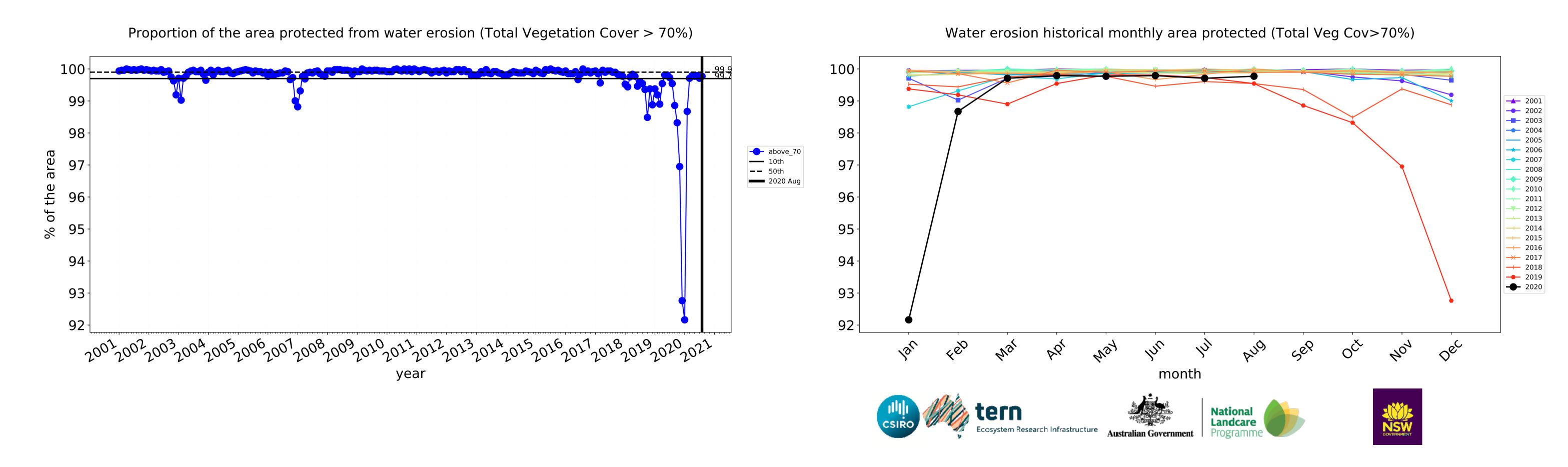


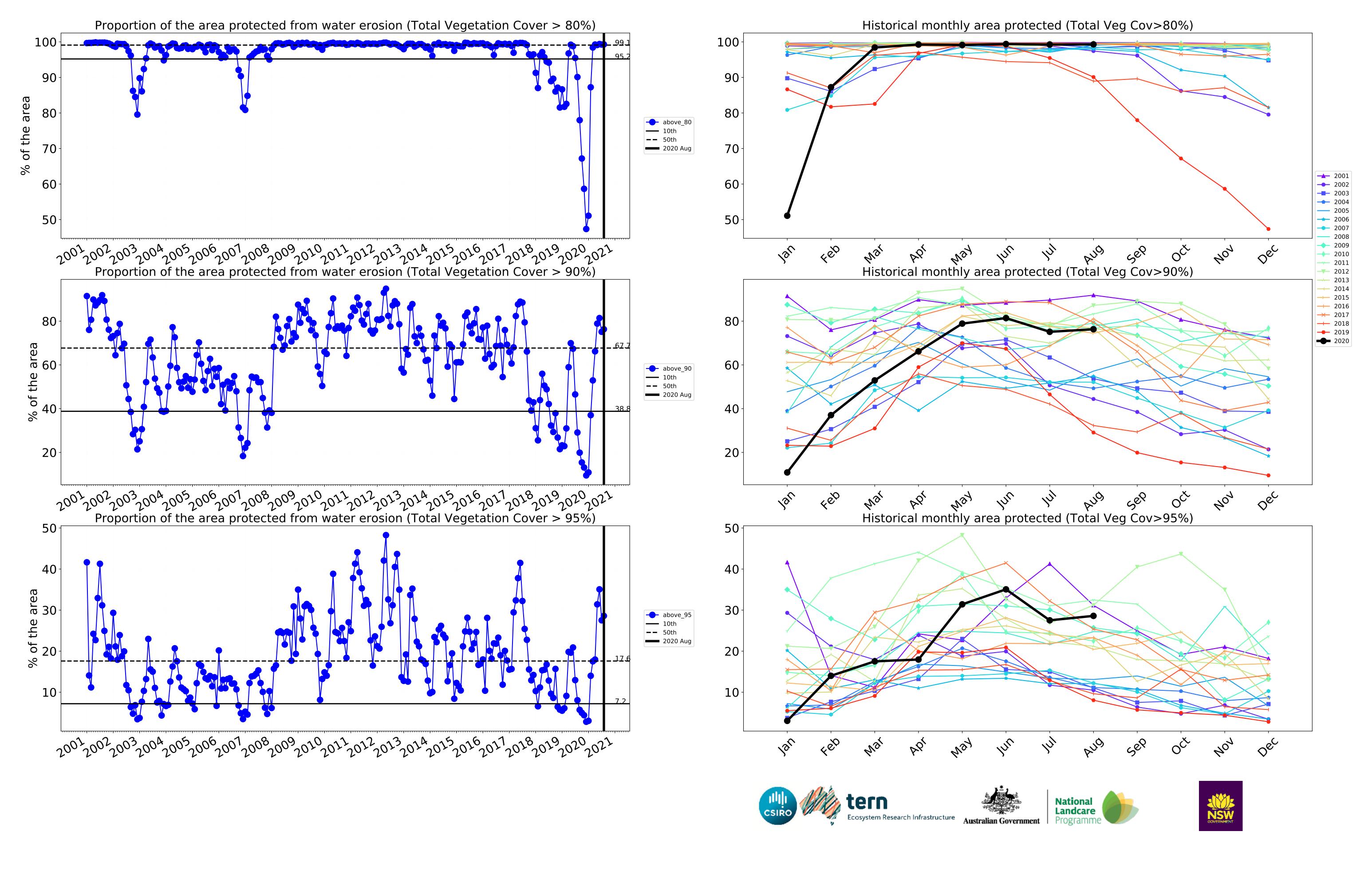




Grazing Woodland forest timeseries



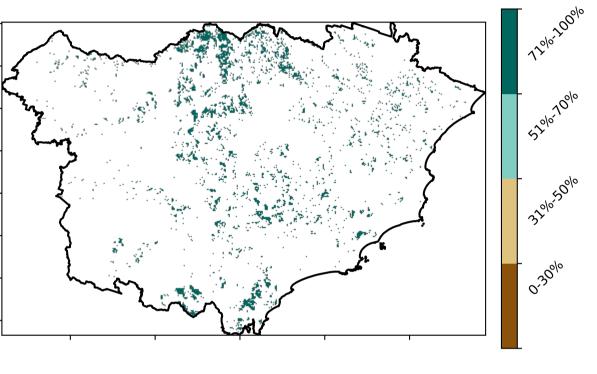


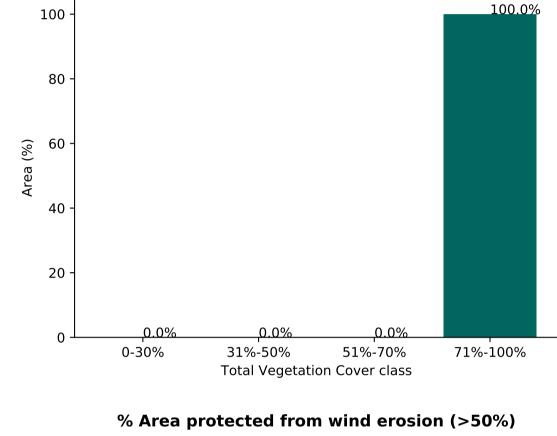


Grazing - Forest (non woodland)

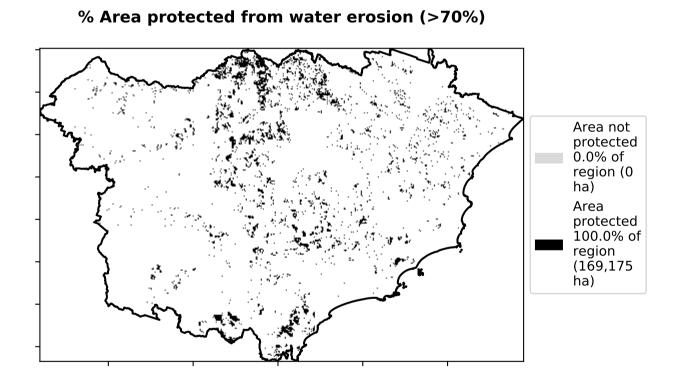
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

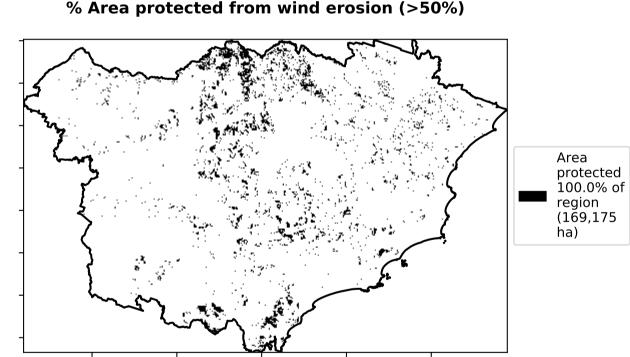
Total Vegetation Cover [%]

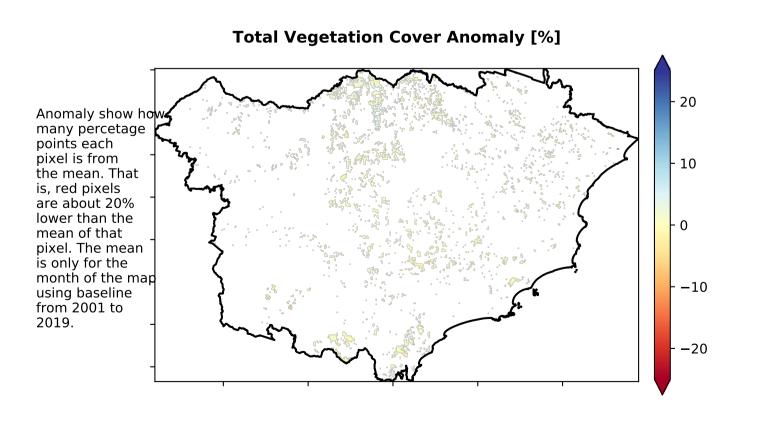


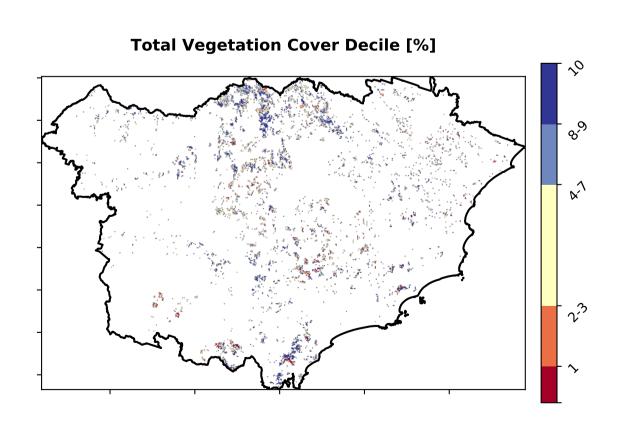


Proportion of vegetation cover class in area







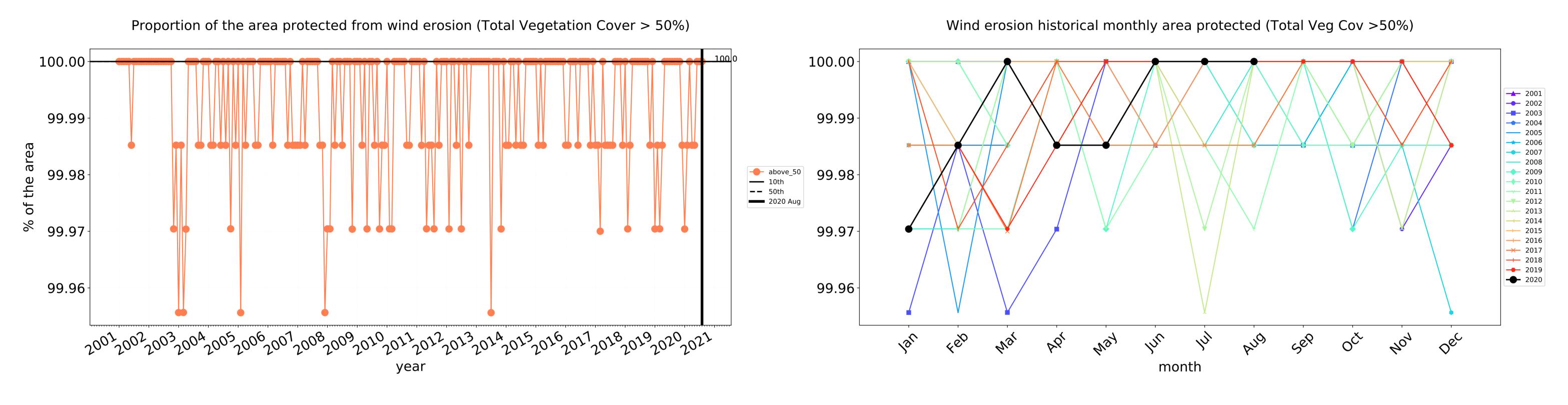


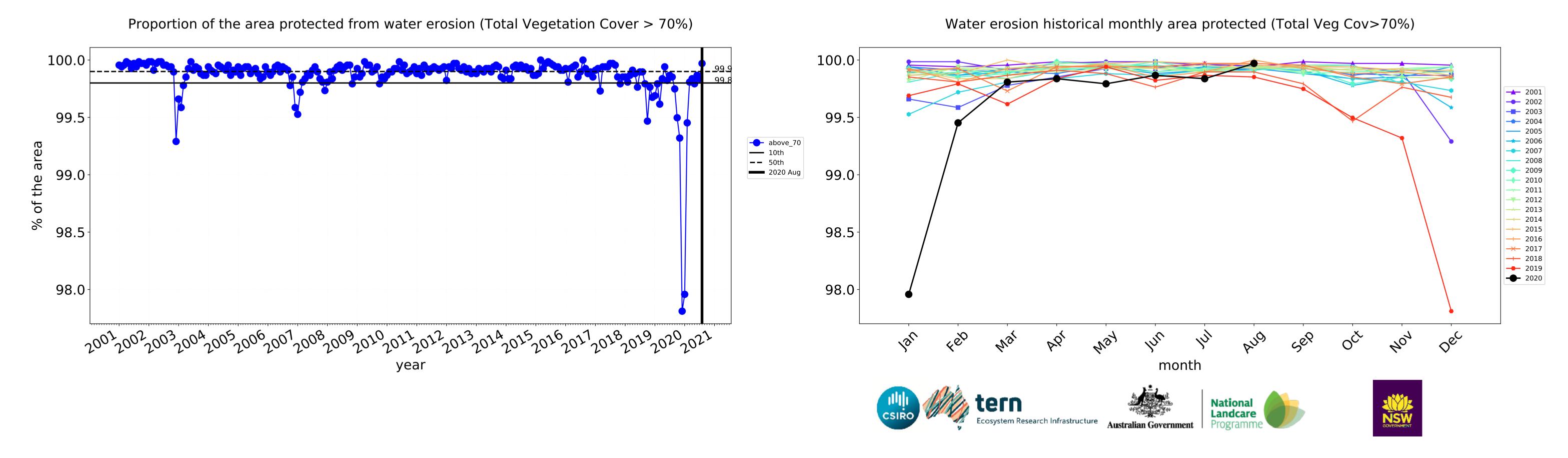


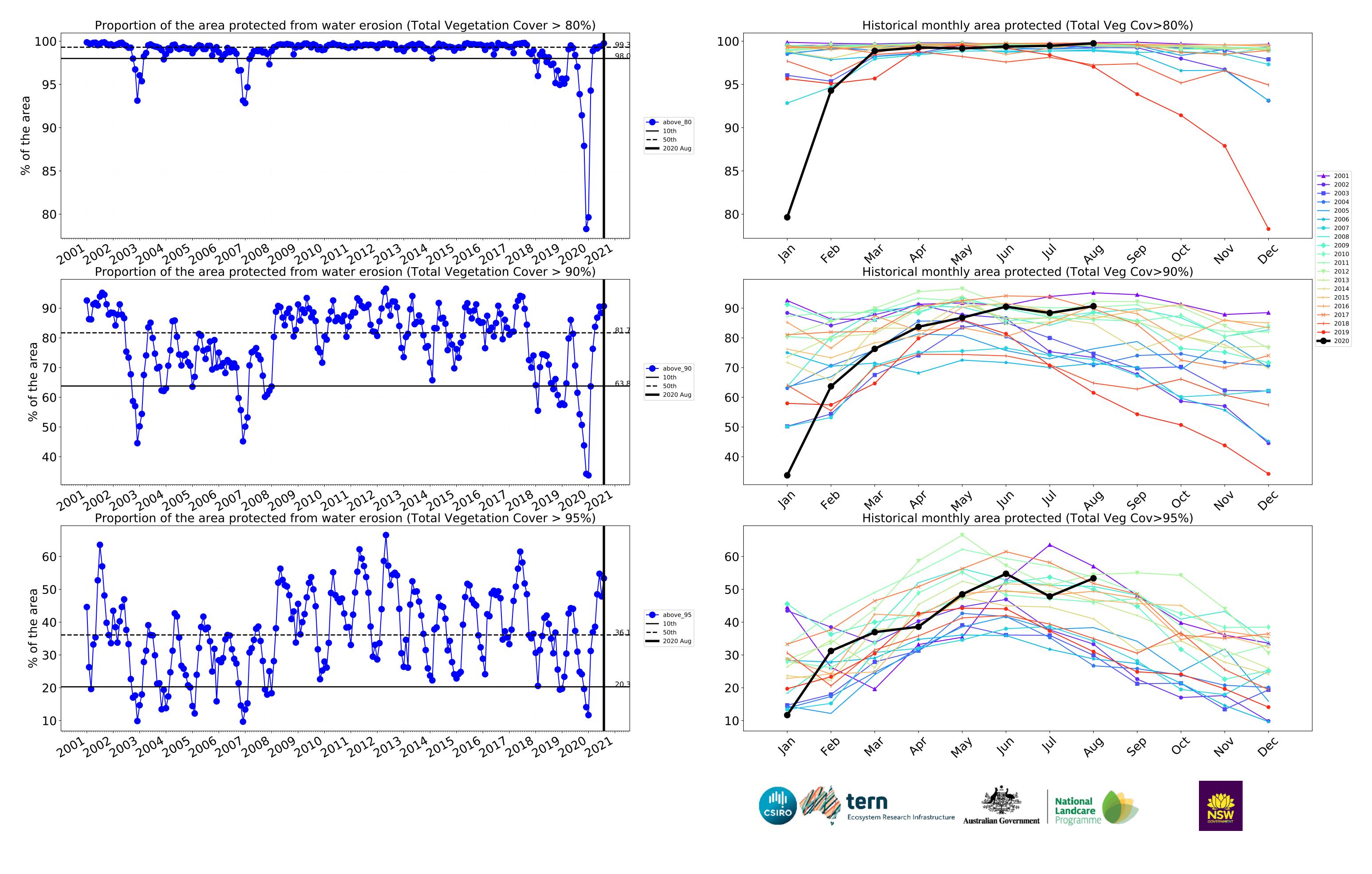






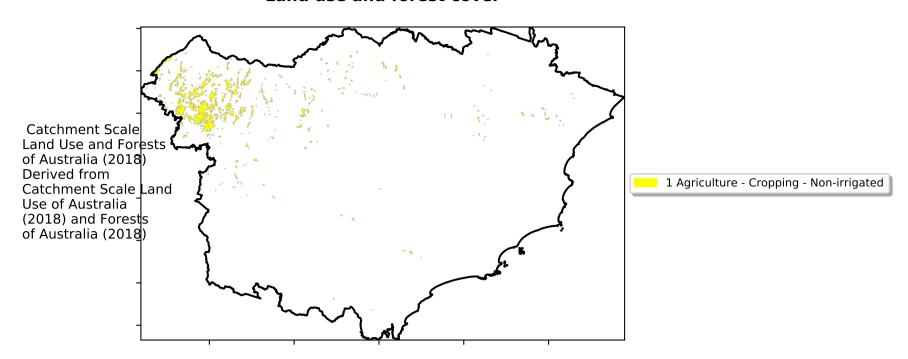




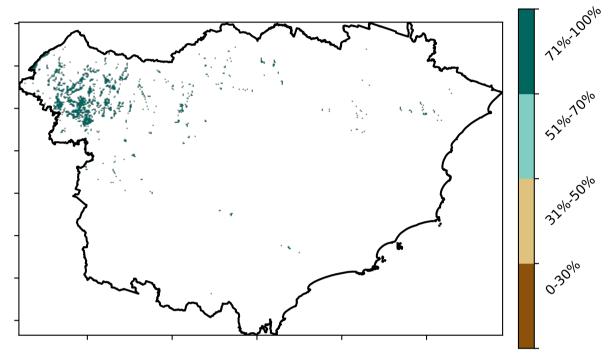


Cropping

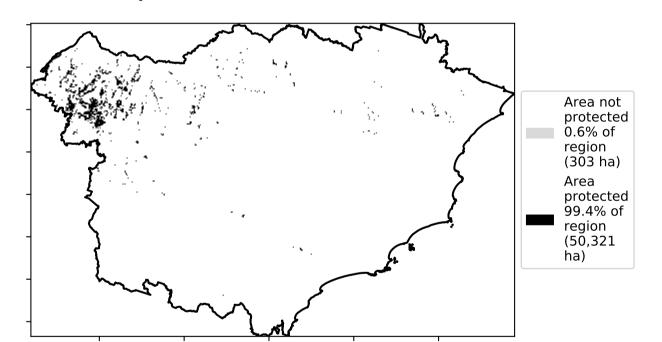
Land use and forest cover



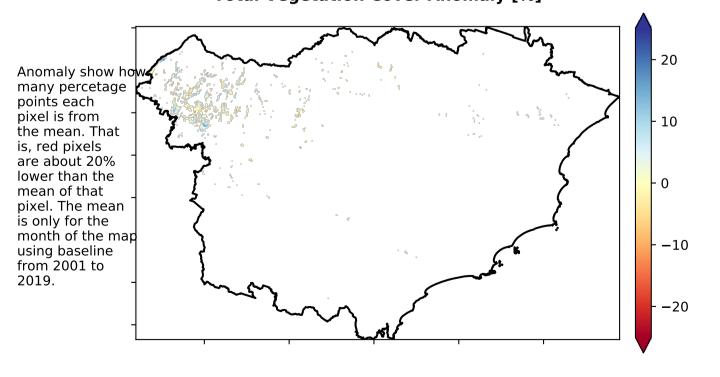
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

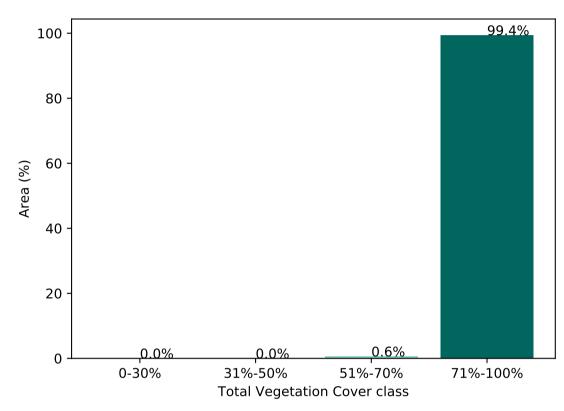


Total Vegetation Cover Anomaly [%]

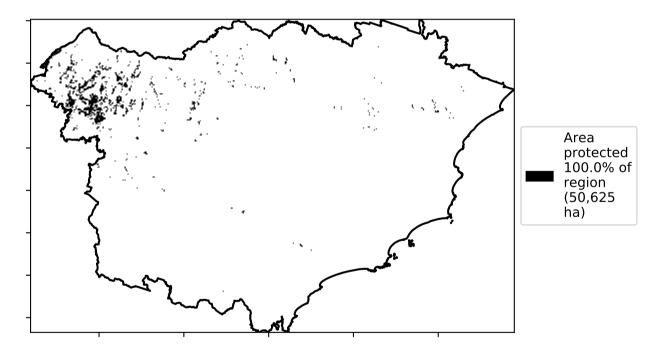


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

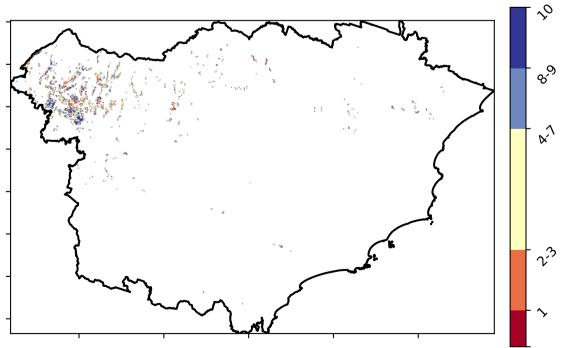
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





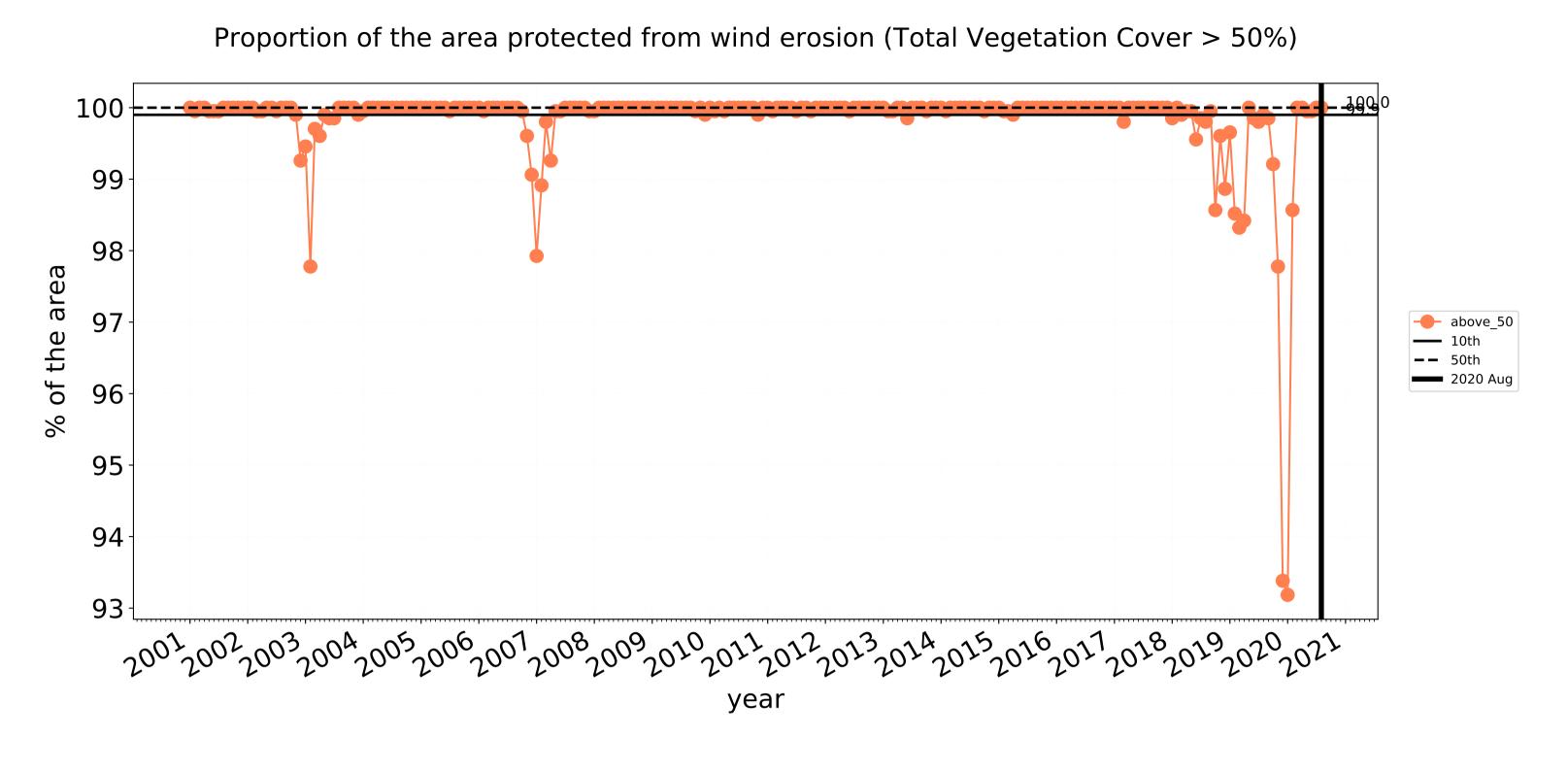


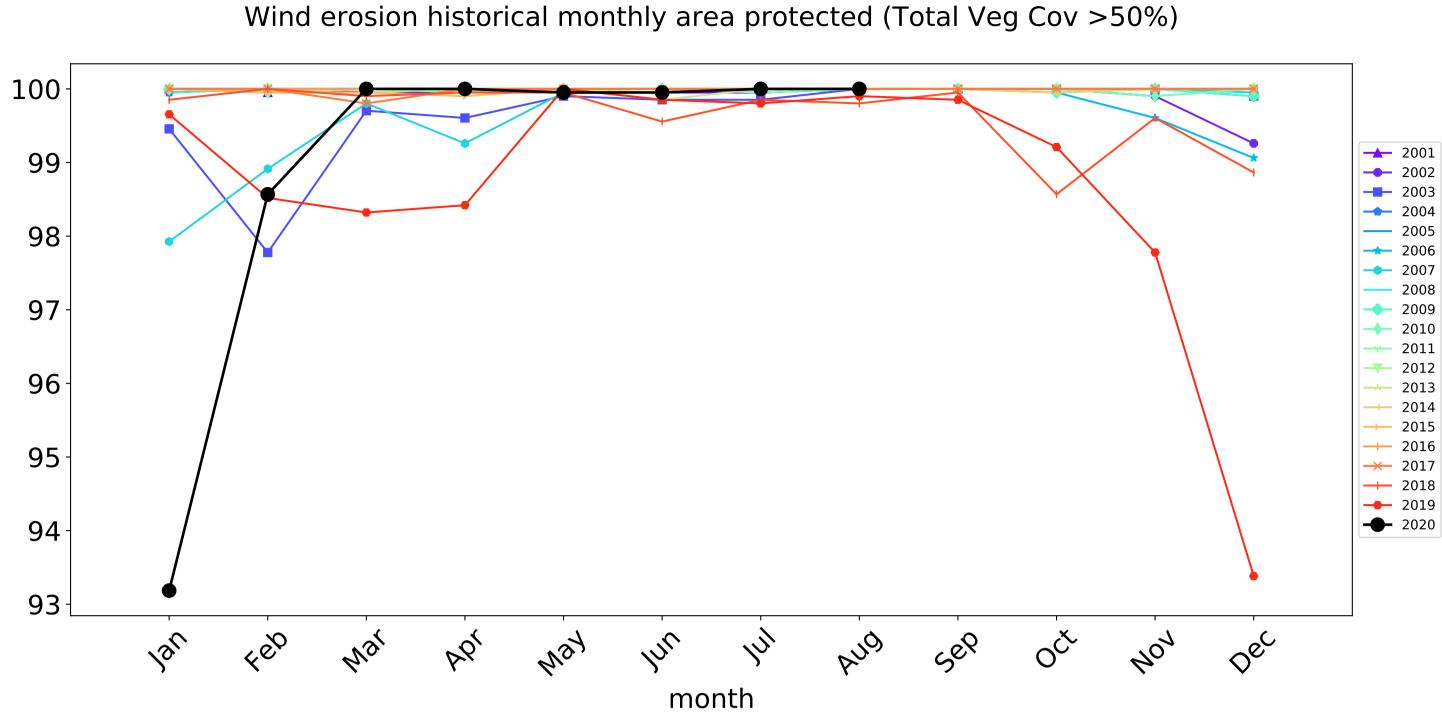


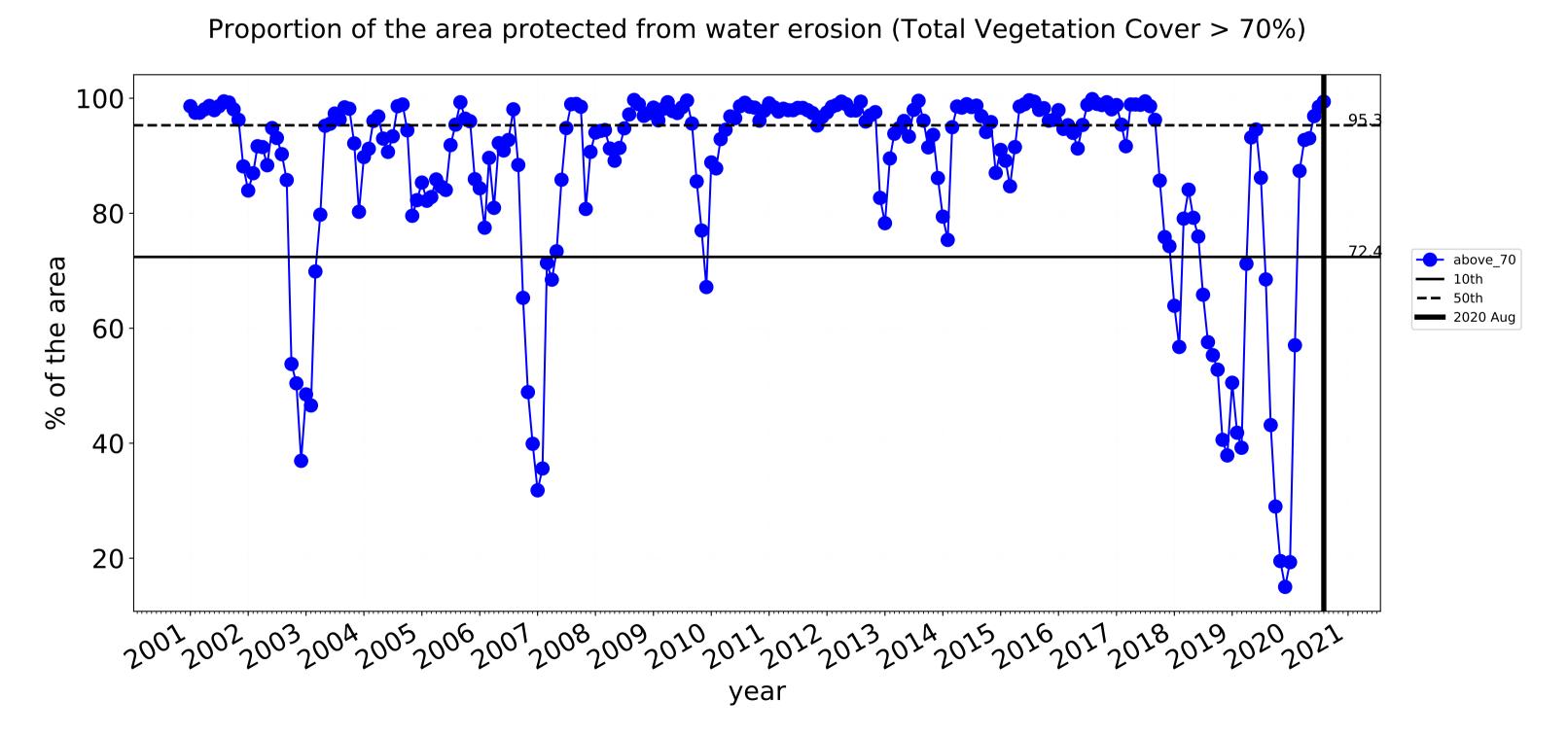


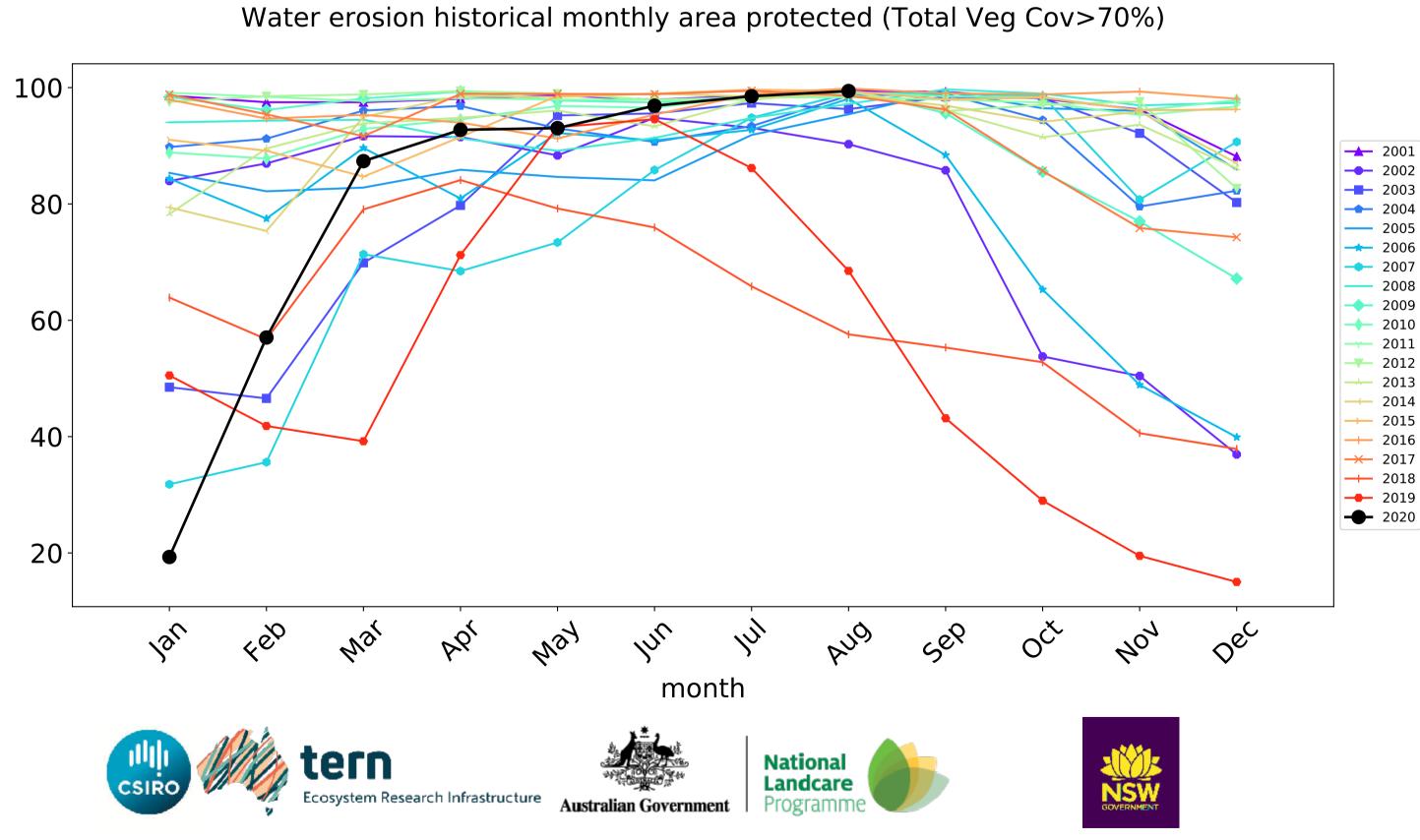


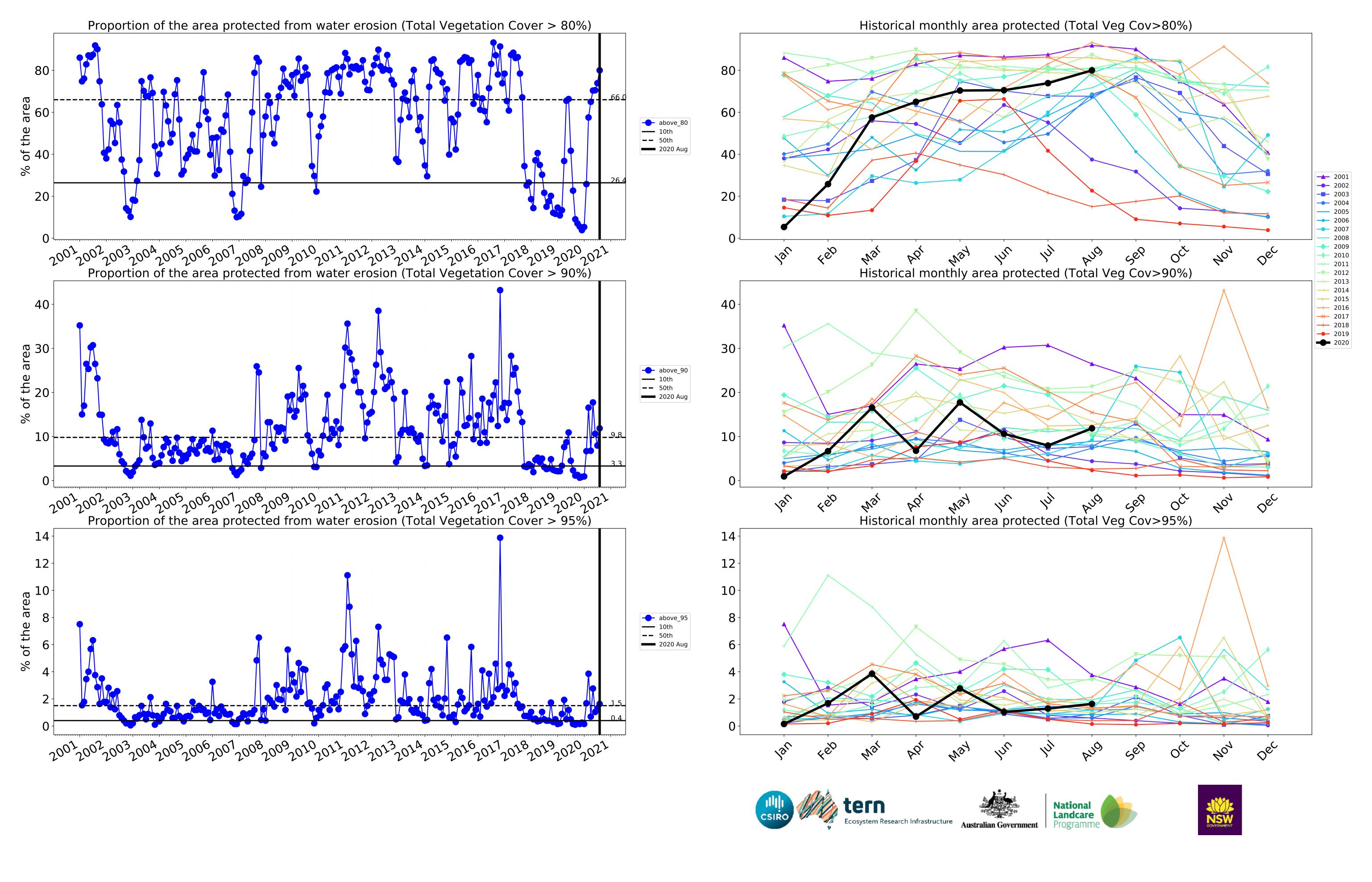
Cropping timeseries







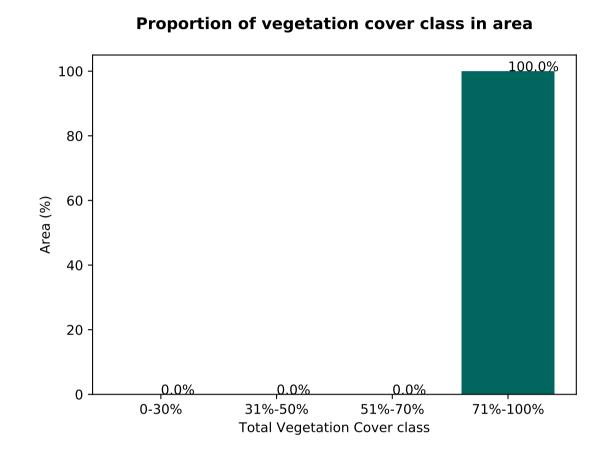


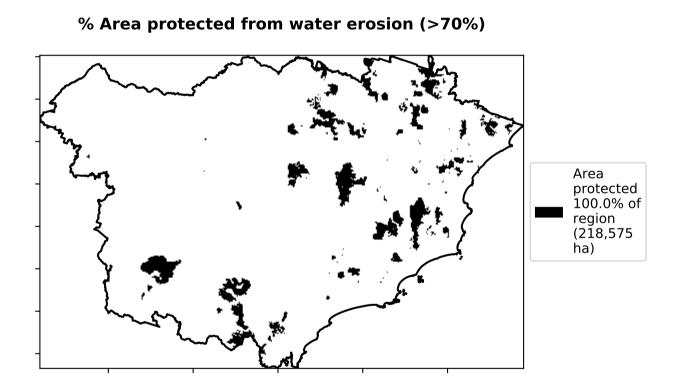


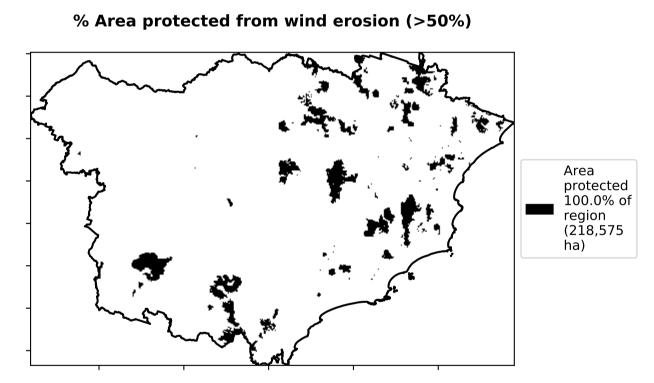
Production native forests and plantation forests

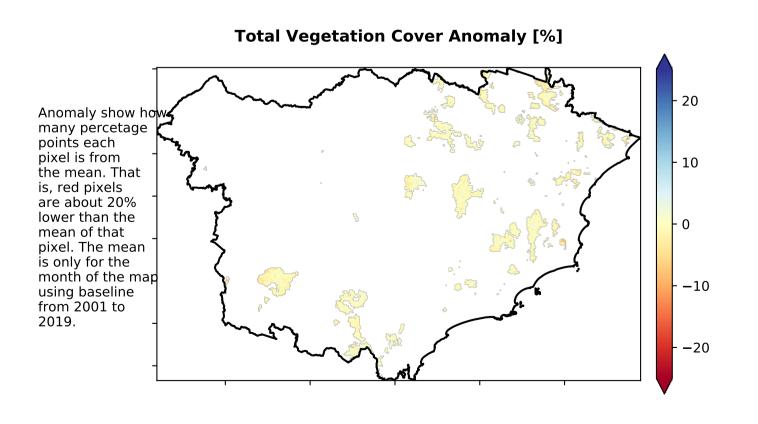
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Production native forests and plantation forests of Australia (2018)

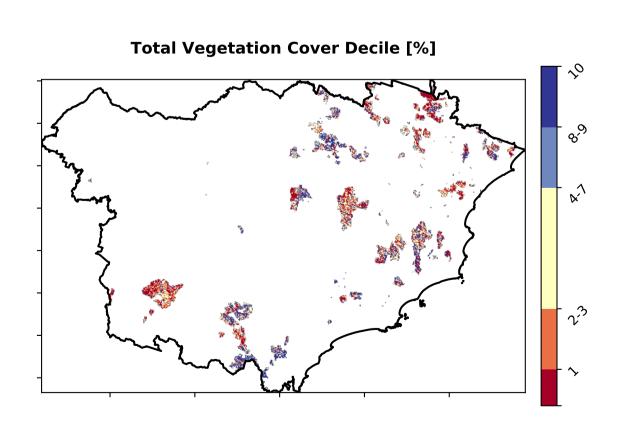
Total Vegetation Cover [%]











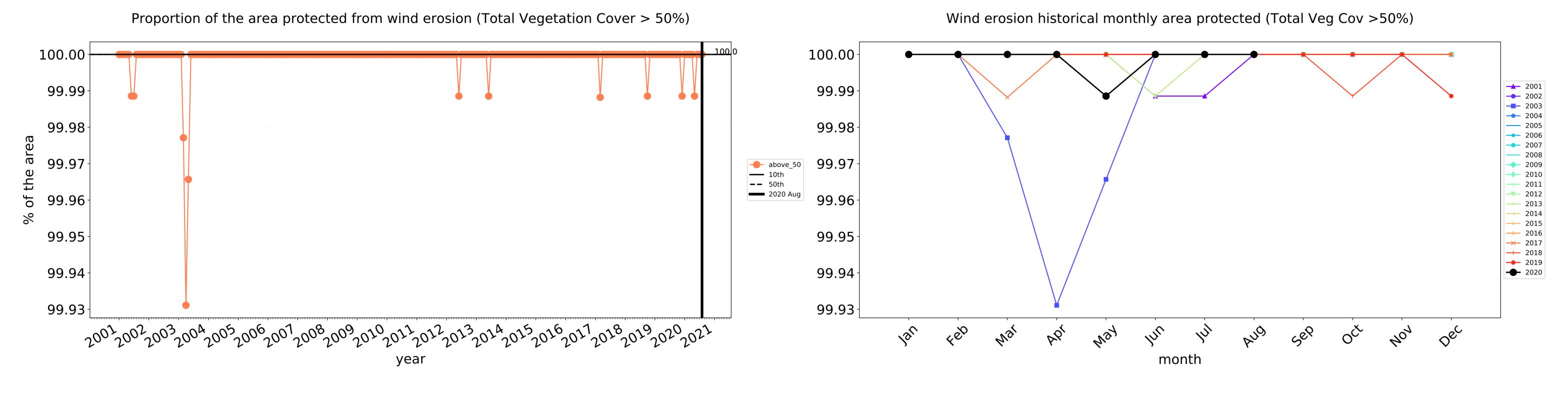


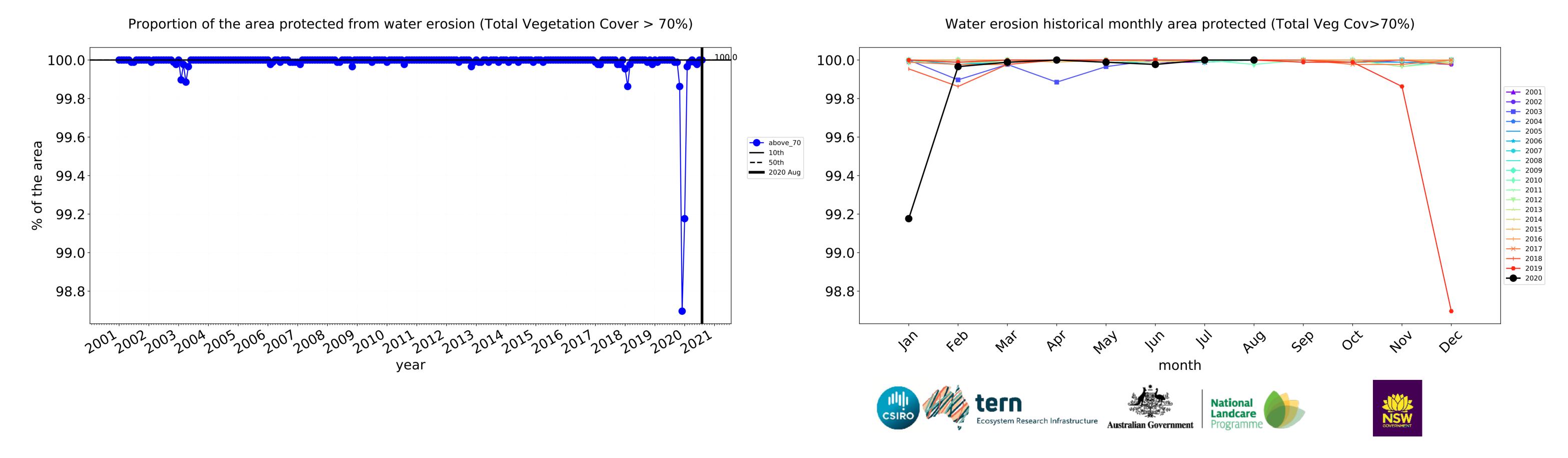


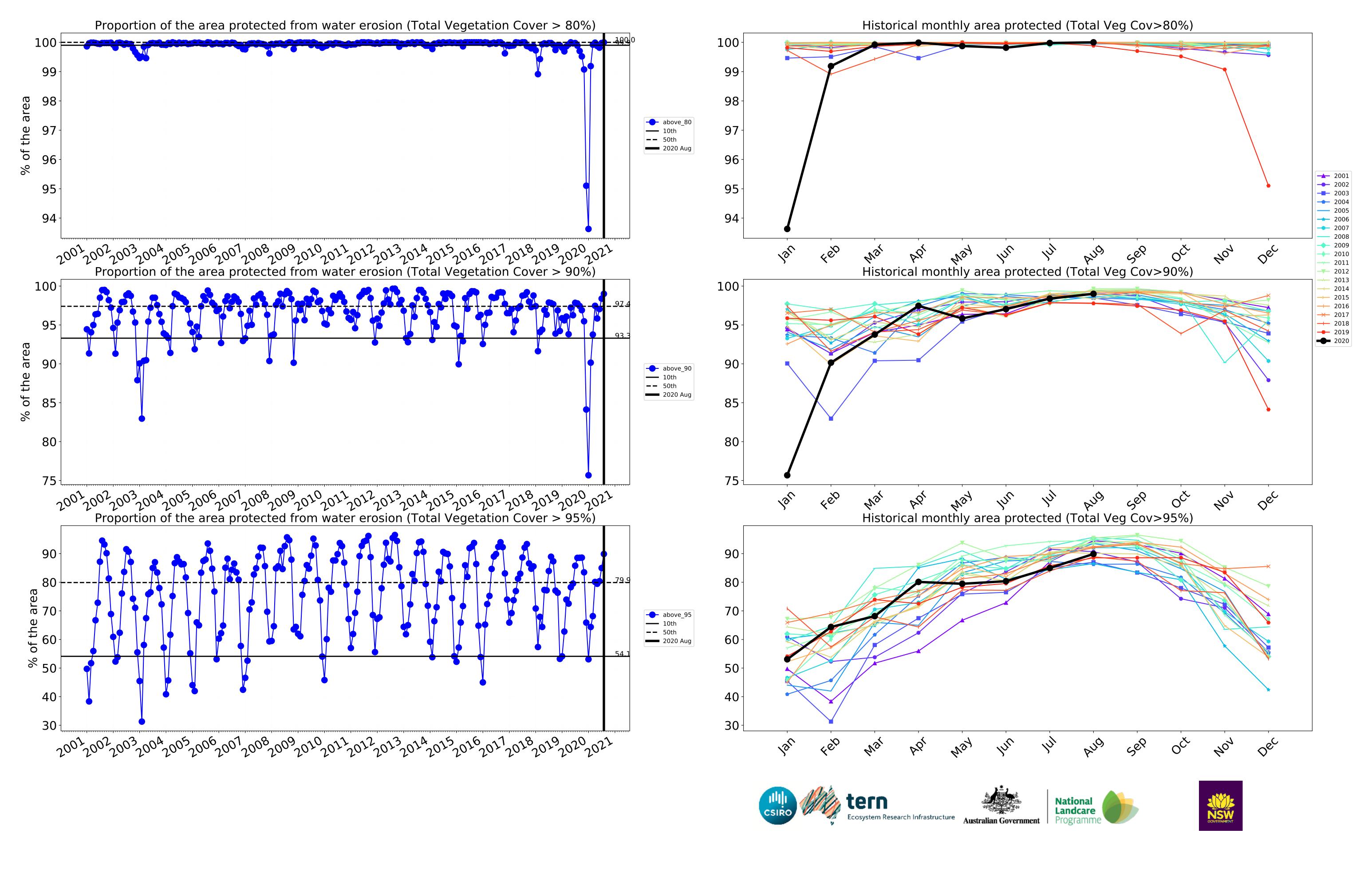




Production native forests and plantation forests timeseries







Hunter (3,243,300 ha and no data 57,125 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	3,243,300	99.9% 3,240,000	99.7% 3,232,925	98.9% 3,206,350	96.2% 3,120,875	75.2% 2,438,750	46.0% 1,492,575
Conservation and natural environments	1,242,575	99.9% 1,241,650	99.9% 1,240,725	99.7% 1,239,375	99.2% 1,233,125	90.9% 1,129,250	65.4% 812,400
Conservation and natural environments non forest	31,175	97.0% 30,250	94.3% 29,400	91.8% 28,625	85.8% 26,750	65.8% 20,525	37.1% 11,575
Conservation and natural environments Woodland forest	138,950	100.0% 138,950	100.0% 138,900	99.8% 138,725	99.0% 137,550	86.9% 120,800	44.3% 61,500
Conservation and natural environments Forest (non woodland)	1,072,450	100.0% 1,072,450	100.0% 1,072,425	100.0% 1,072,025	99.7% 1,068,825	92.1% 987,925	68.9% 739,325
Agriculture	1,581,225	100.0% 1,581,200	100.0% 1,580,850	99.8% 1,578,025	97.0% 1,533,975	64.8% 1,024,650	28.9% 456,850
Grazing	1,503,225	100.0% 1,503,200	100.0% 1,502,850	99.8% 1,500,400	97.9% 1,471,100	67.5% 1,015,200	30.3% 455,650
Grazing non forest	1,213,400	100.0% 1,213,400	100.0% 1,213,125	99.8% 1,210,900	97.5% 1,182,550	63.4% 769,750	27.3% 330,875
Grazing Woodland forest	120,650	100.0% 120,625	99.9% 120,550	99.8% 120,375	99.3% 119,800	76.3% 92,050	28.6% 34,500
Grazing - Forest (non woodland)	169,175	100.0% 169,175	100.0% 169,175	100.0% 169,125	99.7% 168,750	90.7% 153,400	53.4% 90,275
Cropping	50,625	100.0% 50,625	100.0% 50,625	99.4% 50,325	80.0% 40,500	11.9% 6,000	1.6% 825
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.0% 216,400	89.9% 196,475







